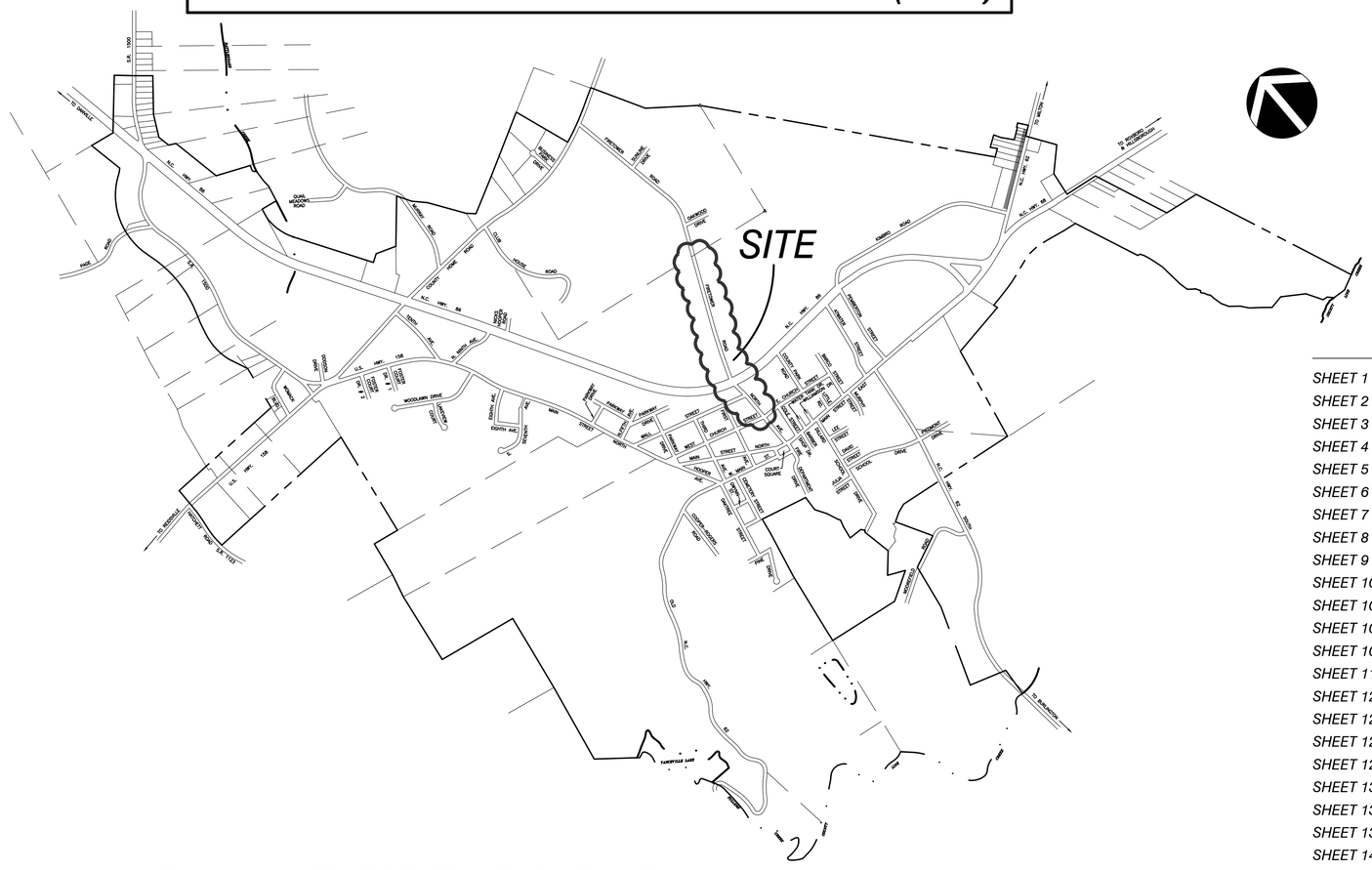
TOWN OF YANCEYVILLE
NORTH AVENUE SIDEWALK &
FIRETOWER ROAD MULTI-USE PATH

CASWELL COUNTY, NORTH CAROLINA

NCDOT PROJECT NO. EB-3314 E
WBS: 33935.2.5
FEDERAL AID NO.: STPEB-000S(765)



INDEX OF SHEETS

TOWN OF YANCEYVILLE

158 EAST CHURCH STREET (TOWN HALL)
YANCEYVILLE, NORTH CAROLINA 27379
TELEPHONE: (336) 694-5431
FAX: (336) 694-1469

MAYOR

TOWN COUNCIL
ALVIN FOSTER, MAYOR PRO-TEM
ODESSA D. GWYNN
BRIAN MASSEY
KEITH TATUM

TOWN OF YANCEYVILLE ADMINISTRATION
BRIAN COLLIE - TOWN MANAGER

ALLEY, WILLIAMS, CARMEN & KING, INC.
BURLINGTON, NORTH CAROLINA

LEVEL III CERTIFIED BY:
TROY KING, P.E.
CERTIFICATION NUMBER : 3739
ISSUED: DECEMBER 2, 2014

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

DATE: AUGUST 15, 2014

ALLEY, WILLIAMS, CARMEN, & KING, INC.
ENGINEERS & ARCHITECTS
740 CHAPEL HILL ROAD
BURLINGTON, NORTH CAROLINA 27215
TELEPHONE: 336-226-5534

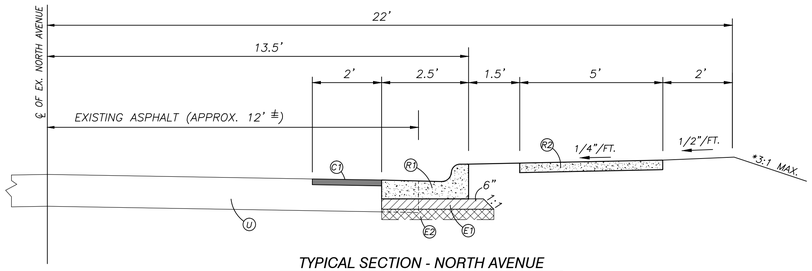
FIRM'S ENGINEERING LICENSE NO. F-0203

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

DocuSigned by: Mark Reich 58637F049AD84D7...

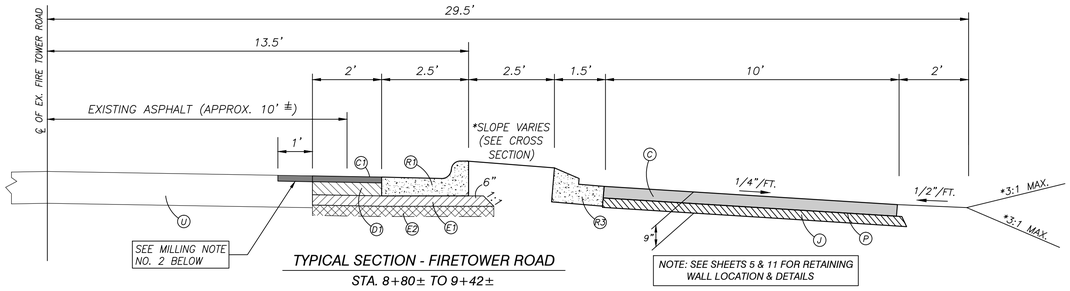
REV. 8/24/15 PER NCDOT COMMENTS
REV. 7/29/15 REVISED WBS NUMBER

JOB NO. 13069



TYPICAL SECTION - NORTH AVENUE

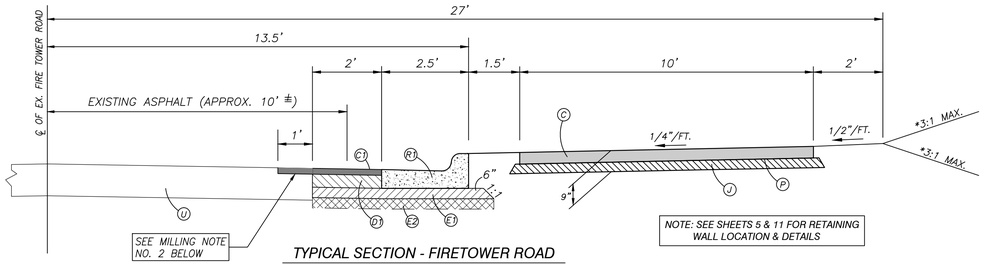
STA. 4+77± TO 7+90±



TYPICAL SECTION - FIRETOWER ROAD

STA. 8+80± TO 9+42±

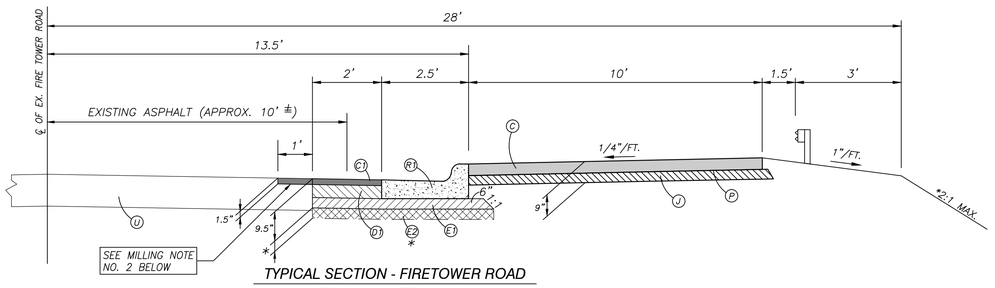
NOTE: SEE SHEETS 5 & 11 FOR RETAINING WALL LOCATION & DETAILS



TYPICAL SECTION - FIRETOWER ROAD

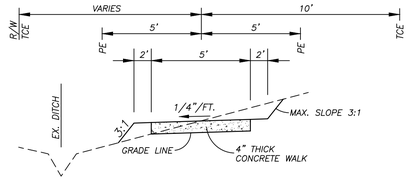
STA. 9+42± TO 11+05±

NOTE: SEE SHEETS 5 & 11 FOR RETAINING WALL LOCATION & DETAILS



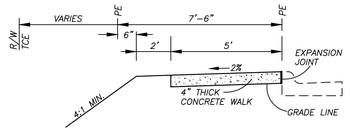
TYPICAL SECTION - FIRETOWER ROAD

STA. 31+11± TO 32+47±



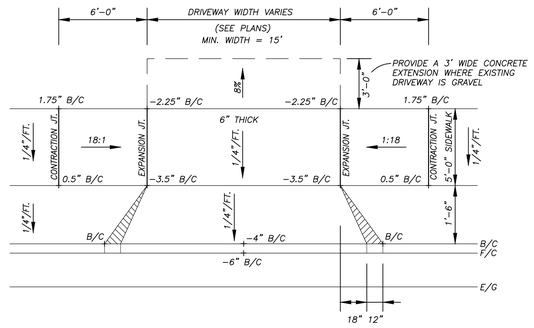
TYPICAL SECTION STA. 0+07± TO 0+43± LB/0+45± LA

STA. 1+82± TO 4+77±

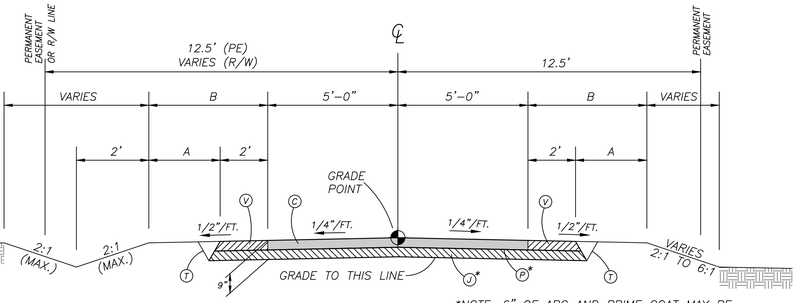


TYPICAL SECTION STA. 0+43± LB/0+45± LA TO 1+82±

BETWEEN STA. 0+00 TO STA. 4+80±, GRADE TYPICAL SECTION TO PROPOSED GRADE LINE. ENGINEER WILL DIRECT SHALLOW UNDERCUTTING ANY AREA DEEMED UNSUITABLE & CONTRACTOR SHALL INSTALL GEOTEXTILE FOR SOIL STABILIZATION & CLASS IV SUBGRADE STABILIZATION AS REQUIRED TO PROVIDE STABLE SUBGRADE.



TYPICAL DRIVEWAY DETAIL



*NOTE: 6" OF ABC AND PRIME COAT MAY BE SUBSTITUTED WITH 3" OF B25.0B

STATION	A	B
11+75 TO 13+63.5	1'	3'
13+63.5 TO 13+90.6	1'-3'	3'-5'
13+90.6 TO 28+50	3'	5'
28+50 TO 28+60	3'-1'	5'-3'
28+60 TO 29+40	1'	3'
29+40 TO 29+50	1'-3'	3'-5'
29+50 TO 31+08	3'	5'
32+44 TO 33+23	3'	5'

RECOMMENDED TYPICAL SECTION OF 10 FT. ASPHALT PATHWAY

(WITH 2 FT. CRUSHED STONE SHOULDER)

STA. 11+75± TO 31+11±

STA. 32+47± TO 33+25

PAVEMENT SCHEDULE

C	PROPOSED APPROXIMATE 1.5" BITUMINUOUS CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQUARE YARD IN EACH OF TWO LAYERS.
J	PROPOSED 6" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
T	EARTH MATERIAL
V	PROPOSED APPROXIMATE 2' OF SELECT GRANULAR MATERIAL.

NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1

PIPE REMOVAL SUMMARY

STATION	LOCATION	LENGTH	SIZE	REMARKS
11+14 LA	LT	6	18" RCP	REMOVE EXISTING 18" FES
11+72 LA	LT	6	18" RCP	REMOVE EXISTING 18" FES
12+72	LT	2'±	18" RCP	REMOVE EXISTING 18" RCP TO CONSTRUCT PROPOSED DI
31+84	RT	UNK	6" TCP	REMOVE EXISTING 6" TCP & HEADWALL

Doghouse Structures	
Structure #	Structure Top
3	575.13 RIM
4	575.69 T/C

CULVERTS

Structure # Up	Structure # Down	DrainageArea	RunoffCoeff	Tc	I 25	Incr Q	FlowRate	25-yr HW/D	LineSize	Line Length	Line Slope	Velocity	InvertUp	InvertDn	HGLUp	HGLDn
13	14	0.42	0.60	10	6.27	1.58	1.58	0.54	15	32	3.13	6.38	596.50	595.50	597.00	595.82
18	19	0.30	0.35	10	6.27	0.66	0.66	0.33	15	32	3.13	5.01	575.20	574.20	575.52	574.41
20	21	1.46	0.35	10	6.27	3.20	3.20	0.82	15	72	4.17	8.78	546.00	543.00	546.72	543.42
22	23 *								84	40	0.33		538.63	538.50		
26	27	0.07	0.35	10	6.27	0.15	0.15	0.17	15	32	6.88	4.21	555.00	552.80	555.15	552.88

* No hydraulic data provided other than inverts & slope since culvert is an extension to existing NCDOT culvert.

STORM SEWER CHART

Structure # Up	Structure # Down	DrainageArea	TotalArea	RunoffCoeff	Tc	I 25	Incr Q	FlowRate	Capacity Full	LineSize	Line Length	Line Slope	Vel Ave	InvertUp	InvertDn	RimElev Up	Rim Elev Dn	HGLUp	HGLDn
		(ac)	(ac)	(C)	(min)	(in/hr)	(cfs)	(cfs)	(cfs)	(in)	(ft)	(%)	(ft/s)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
1	2	0.6	0.6	0.65	10.3	5.16	2.01	2.01	17.84	15	80.43	6.55	3.74	587.59	592.85	N/A	N/A	588.15	593.59
6	5	0.16	0.16	0.95	10.0	5.89	0.89	0.89	7.18	15	8.55	1.05	3.44	572.71	572.62	575.71	N/A	573.08	572.92
8	7	0.17	0.17	0.85	10.0	5.89	0.85	0.85	19.25	15	32.49	7.57	5.36	584.99	582.53	587.99	586.03	585.35	582.71
11	12	0.06	4.01	0.60	13.4	5.27	0.21	8.65	11.38	18	28.00	1.00	6.55	593.88	593.60	597.00	N/A	595.02	594.58
11A	11	0.05	0.05	0.90	10.0	5.89	0.26	0.26	2.46	12	69.00	0.41	0.34	594.16	593.88	595.70	597.00	596.71	596.71
15	17	0.33	0.33	0.35	10.0	5.89	0.68	0.68	11.18	15	38.00	2.55	3.87	594.35	593.38	N/A	596.10	594.67	593.59
16	17	0.28	0.28	0.60	10.0	5.89	0.99	0.99	12.12	15	10.00	3.00	4.48	593.68	593.38	N/A	596.10	594.07	593.62
24	25	0.08	0.08	0.95	10.0	5.89	0.45	0.45	15.34	15	52.00	19.23	2.42	551.60	541.60	557.27	N/A	551.86	541.86

TRENCHING FOR BASE COURSE/MILLING NOTES:

WHERE THE EDGE OF PROPOSED CONCRETE GUTTER IS WITHIN EDGE OF EXISTING PAVEMENT, THEN:

1. TRENCH AREA RIGHT OF PROPOSED EDGE OF CONCRETE GUTTER TO BASE COURSE SUBGRADE (E1). IF DIRECTED BY ENGINEER, UNDERCUT & PROVIDE BASE COURSE (E2). INSTALL BASE COURSE.
2. MILL A 1 FT. WIDE STRIP, APPROXIMATELY 1.5" IN DEPTH ONTO EXISTING PAVEMENT.
3. PROVIDE A NEAT, UNIFORM EDGE OF CONCRETE GUTTER.
4. SEE PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

WHERE THE EDGE OF PROPOSED CONCRETE GUTTER IS BEYOND EDGE OF EXISTING PAVEMENT, THEN:

1. TRENCH AREA FROM 2' LEFT OF EDGE OF CONCRETE GUTTER TO 1' RIGHT OF BACK OF CURB TO BASE COURSE SUBGRADE (E1), IF DIRECTED BY ENGINEER, UNDERCUT & PROVIDE BASE COURSE (E2). INSTALL BASE COURSE (E1) & (D1).
2. PROVIDE A NEAT, UNIFORM EDGE OF CONCRETE GUTTER.
3. SEE PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

PAVEMENT SCHEDULE

C1	PROPOSED APPROXIMATE 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQUARE YARD IN EACH OF TWO LAYERS.
D1	PROPOSED APPROXIMATE 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I 19.0 B, AT AN AVERAGE RATE OF 456 LBS. PER SQUARE YARD. TYPE B25.0B MAY BE USED IF INSTALLATION OCCURS SAME DAY AS E1.
E1	PROPOSED APPROXIMATE 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQUARE YARD.
E2	PROPOSED SHALLOW UNDERCUT TO STABLE SUBGRADE AS DIRECTED BY ENGINEER (DEPTH VARIES). PROPOSED DEPTH VARIES, ASPHALT CONCRETE BASE COURSE, TYPE B 25.0B AT AN AVERAGE RATE OF 114 LBS/IN THICK PER SQUARE YARD. MAXIMUM LIFT THICKNESS OF B 25.0B IS 5.5 INCHES.
R1	2'-6" CONCRETE CURB & GUTTER, NCDOT STD. 846.01
R2	5'-0" CONCRETE SIDEWALK, 4" THICK
R3	1'-6" CONCRETE CURB & GUTTER, NCDOT STD. 846.01
U	EXISTING PAVEMENT

MULTI-USE PATH NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NCDOT 2012 STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.
2. WHEN NECESSARY, RELOCATE ROADWAY SIGNS.
3. ADJUST UTILITIES, VALVES, METER BOXES AND MANHOLES AS REQUIRED TO MATCH ADJACENT GRADE.

CONCRETE SIDEWALK NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NCDOT 2012 STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.
2. CONCRETE MIX DESIGN SHALL BE CLASS A, AIR ENTRAINED, NON-VIBRATORY MIX AND SHALL BE A STANDARD NCDOT APPROVED MIX DESIGN.
3. WHEN NECESSARY, RELOCATE ROADWAY SIGNS.
4. ADJUST UTILITIES, VALVES, METER BOXES AND MANHOLES AS REQUIRED TO MATCH SIDEWALK/SHOULDER GRADE.
5. ALL SIDEWALKS SHALL BE IN COMPLIANCE WITH ADA REQUIREMENTS.
6. USE HIGH EARLY STRENGTH CONCRETE FOR ALL DRIVEWAYS.

DocuSigned by: Mark Reith 58637F046ADB4D7...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REIGH

REV. 8/24/15 PER NCDOT COMMENTS
REV. 7/29/15 REVISED FIRE TOWER ROAD SECTIONS
REV. 3/13/15 REVISED CULVERTS CHART
REV. 1/27/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

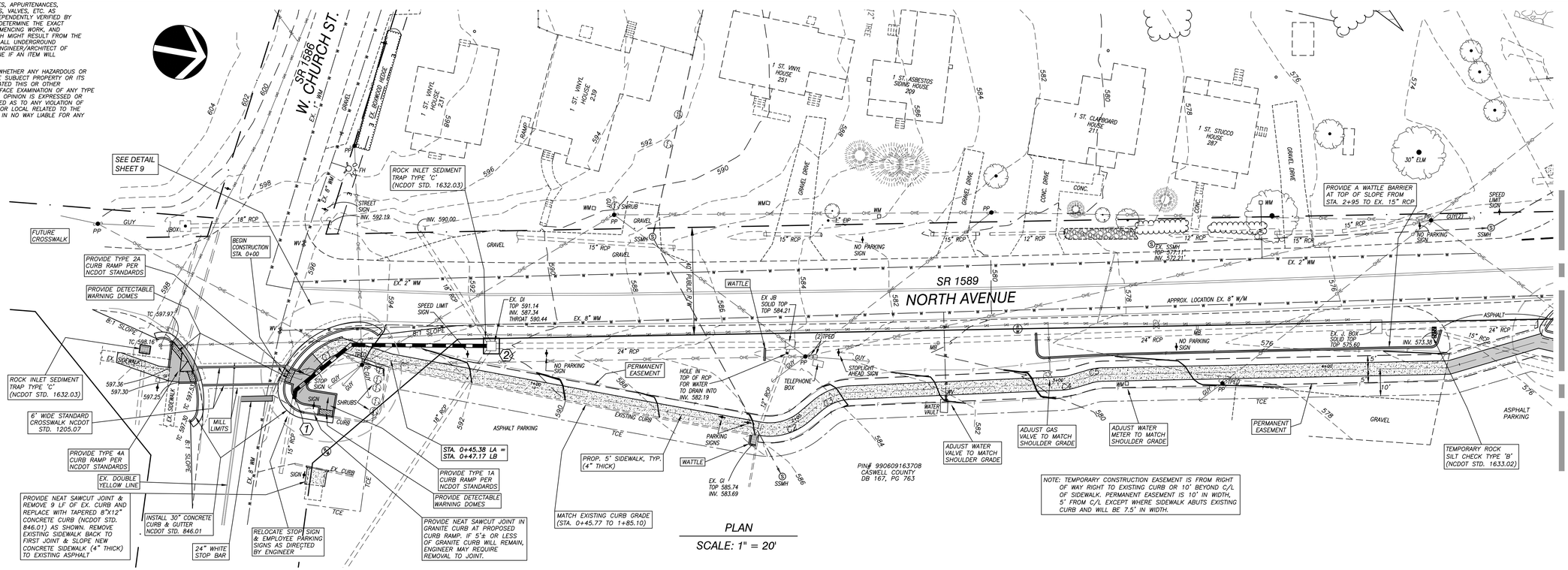
DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

TYPICAL SECTIONS

JOB NO. 13069
DWG NAME: 13069(10153)BASE.DWG
SHEET NO. 2

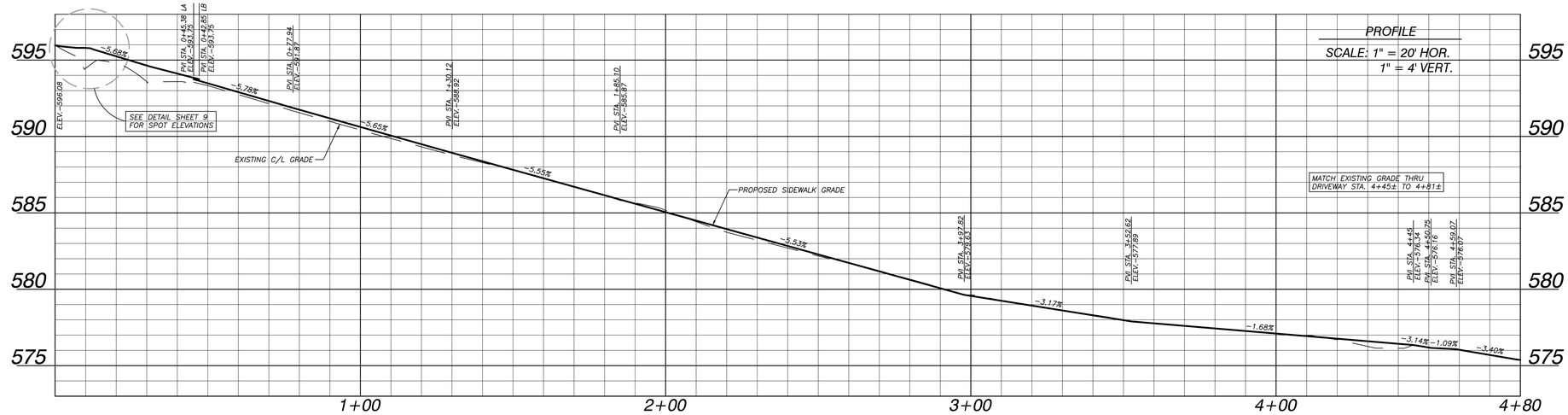
THIS PLAN DOES NOT PURPORT TO SHOW ALL EXISTING UTILITIES, LINES, APPURTENANCES, ETC., AND THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES, PIPES, VALVES, ETC. AS SHOWN ARE IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER/ARCHITECT. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES, LINES, PIPES, ETC. BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, PIPES AND VALVES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/ARCHITECT OF ANY CONFLICTS WITH EXISTING AND PROPOSED FACILITIES TO DETERMINE IF AN ITEM WILL NEED TO BE RELOCATED.

THE ENGINEER/ARCHITECT HAS MADE NO EXAMINATION TO DETERMINE WHETHER ANY HAZARDOUS OR TOXIC MATERIALS ARE PRESENT OR CONTAINED IN, UNDER, OR ON THE SUBJECT PROPERTY OR ITS WATERS, OR IF ANY HAZARDOUS OR TOXIC MATERIALS HAVE CONTAMINATED THIS OR OTHER PROPERTIES OR ITS WATERS IN ANY WAY WHATSOEVER. NO SUB-SURFACE EXAMINATION OF ANY TYPE HAS BEEN MADE BY THE ENGINEER/ARCHITECT, AND ACCORDINGLY, NO OPINION IS EXPRESSED OR INFERRED ON ALL SUCH MATTERS. FURTHER, NO OPINION IS RENDERED AS TO ANY VIOLATION OF ANY ENVIRONMENTAL LAWS OR REGULATIONS, EITHER FEDERAL, STATE, OR LOCAL RELATED TO THE INFORMATION SHOWN ON THIS PLAN AND THE ENGINEER/ARCHITECT IS IN NO WAY LIABLE FOR ANY VIOLATION OF SUCH ENVIRONMENTAL LAWS SHOULD SUCH EXIST.



PLAN

SCALE: 1" = 20'



CONCRETE SIDEWALK NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NCDOT 2012 STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.
2. CONCRETE MIX DESIGN SHALL BE CLASS A, AIR ENTRAINED, NON-VIBRATORY MIX AND SHALL BE A STANDARD NCDOT APPROVED MIX DESIGN.
3. WHEN NECESSARY, RELOCATE ROADWAY SIGNS.
4. ADJUST UTILITIES, VALVES, METER BOXES AND MANHOLES AS REQUIRED TO MATCH SIDEWALK/SHOULDER GRADE.
5. ALL SIDEWALKS SHALL BE IN COMPLIANCE WITH ADA REQUIREMENTS.
6. USE HIGH EARLY STRENGTH CONCRETE FOR ALL DRIVEWAYS.

STRUCTURE #	NCDOT STD. # /REMARKS
(1)	840.72
(2)	EX. DROP INLET

(SEE SHEET 2 FOR ADDITIONAL STORM DRAINAGE INFORMATION)

SEE CROSS SECTION SHEETS 10.1-10.4 FOR ADDITIONAL INFORMATION

SEE SHEET 14.2 FOR CONSTRUCTION SEQUENCE

TOTAL DISTURBED AREA - 2.25 ACRES ±

HORIZONTAL ALIGNMENT CURVE DATA

CURVE #	DEG OF CURVE	DELTA	LENGTH	TANGENT DIST	RADIUS	PI	PC	PT
C1	233°51'37"	48°21'33"	20.68	11.00	24.50	0+18.58	0+07.58	0+28.36
		172°40'55"				0+47.17 LB 0+45.38 LA		
		179°55'38"				0+77.95		
		179°46'02"				1+30.13		
C2	286°28'44"	50°38'38"	17.68	9.46	20.00	1+94.57	1+85.10	2+02.78
C3	286°28'44"	37°53'11"	13.22	6.86	20.00	2+16.25	2+09.38	2+22.61
C4	286°28'44"	13°57'18"	4.87	2.45	20.00	3+03.28	3+00.84	3+05.71
C5	286°28'44"	15°14'28"	5.32	2.68	20.00	3+14.46	3+11.78	3+17.10
		164°51'53"				4+45.91		

LEGEND

○	EIP	⊛	CLEAN OUT
×	CALCULATED POINT	▭	CURB INLET
☼	LAMP POST	▥	GRATE INLET
Ⓢ	SANITARY SEWER MANHOLE	■	YARD INLET
PP	POWER POLE	MW	MONITORING WELL
LP	LIGHT POLE	☼	LANDSCAPE LIGHT
WM	WATER METER	B°	BOLLARDS
WV	WATER VALVE	GTS	GAS TESTING STATION
⊕	FIRE HYDRANT	TPED	TELEPHONE PEDESTAL

REV. 8/24/15 PER NCDOT COMMENTS
REV. 7/31/15 PER NCDOT COMMENTS
REV. 4/1/15 ADDED E.C. DEVICES @ EX. INLETS & REVISED NORTH ARROW
REV. 3/13/15 ADDED LB/LA STATIONS
REV. 1/27/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE:	8/15/14
DRAWN BY:	WDF
CHECKED BY:	MDR

NORTH AVENUE SIDEWALK & FIRETOWER ROAD MULTI-USE PATH
(FROM CHURCH STREET TO ±2400' NORTH OF NC HWY 86N)

JOB NO. 13069
DWG NAME: 13069(10153)BASE.DWG
SHEET NO. 3

THIS PLAN DOES NOT PURPORT TO SHOW ALL EXISTING UTILITIES, LINES, APPURTENANCES, ETC., AND THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES, PIPES, VALVES, ETC. AS SHOWN ARE IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER/ARCHITECT. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES, LINES, PIPES, ETC. BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, PIPES AND VALVES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/ARCHITECT OF ANY CONFLICTS WITH EXISTING AND PROPOSED FACILITIES TO DETERMINE IF AN ITEM WILL NEED TO BE RELOCATED.

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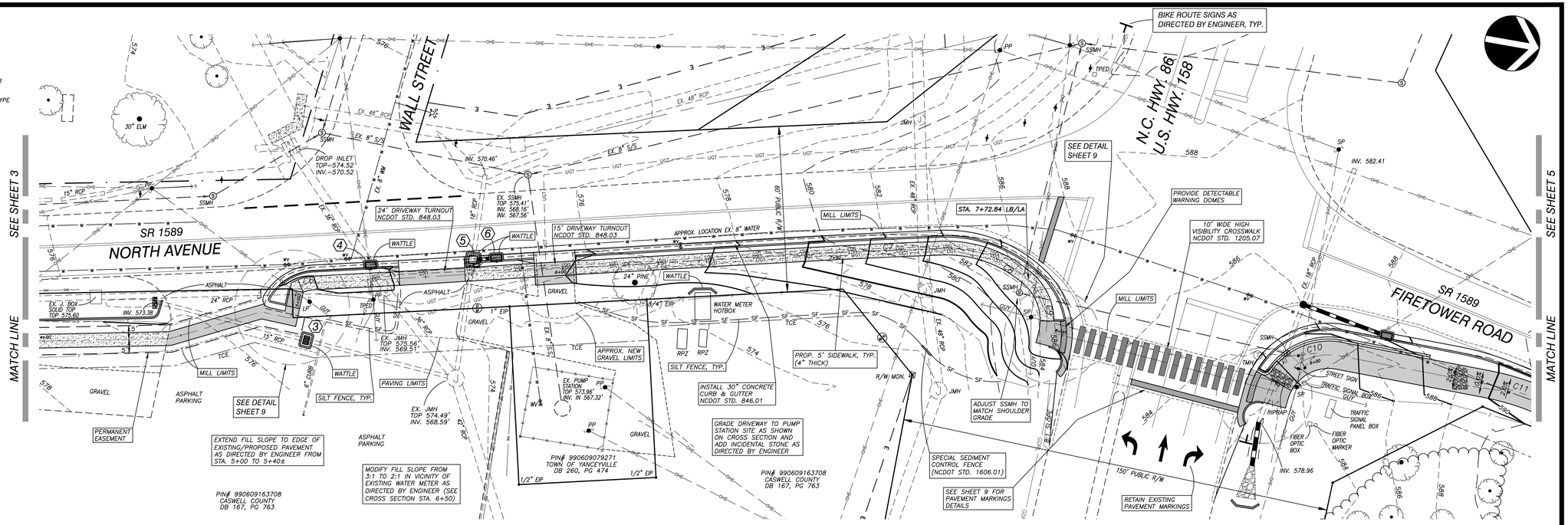
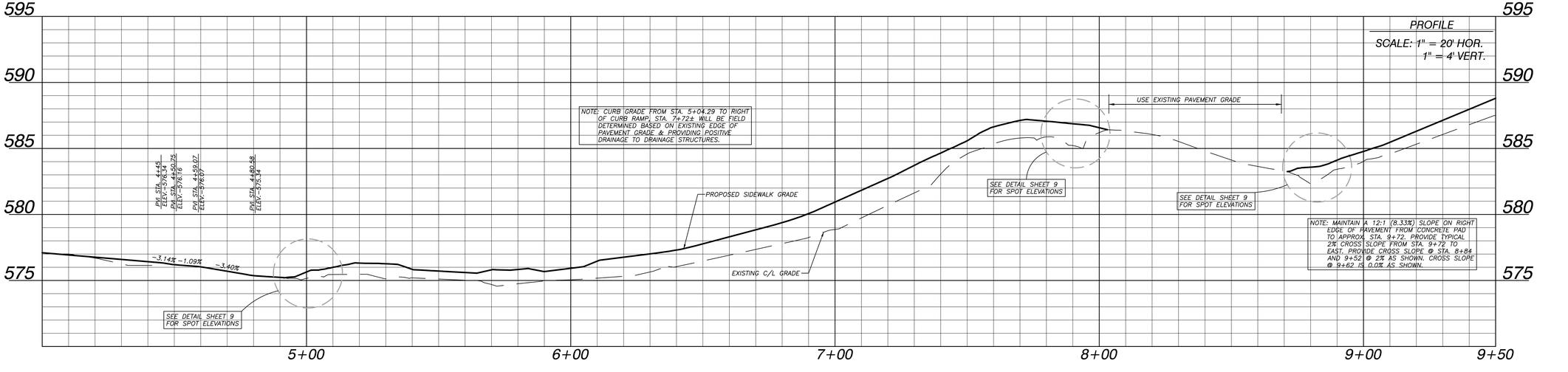
STRUCTURE #	NCDOT STD. # /REMARKS	TYPE
③	840.15	
④	840.01	F
⑤	840.41	
⑥	840.01	E

(SEE SHEET 2 FOR ADDITIONAL STORM DRAINAGE INFORMATION)



PLAN

SCALE: 1" = 20'



4" THICK CONCRETE, SIDEWALK

6" THICK CONCRETE, DRIVEWAY

CONCRETE SIDEWALK NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NCDOT 2012 STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.
2. CONCRETE MIX DESIGN SHALL BE CLASS A, AIR ENTRAINED, NON-VIBRATORY MIX AND SHALL BE A STANDARD NCDOT APPROVED MIX DESIGN.
3. WHEN NECESSARY, RELOCATE ROADWAY SIGNS.
4. ADJUST UTILITIES, VALVES, METER BOXES AND MANHOLES AS REQUIRED TO MATCH SIDEWALK/SHOULDER GRADE.
5. ALL SIDEWALKS SHALL BE IN COMPLIANCE WITH ADA REQUIREMENTS.
6. USE HIGH EARLY STRENGTH CONCRETE FOR ALL DRIVEWAYS.

SEE CROSS SECTION SHEETS 10.1-10.4 FOR ADDITIONAL INFORMATION

SEE SHEET 14.2 FOR CONSTRUCTION SEQUENCE

TOTAL DISTURBED AREA - 2.25 ACRES ±

HORIZONTAL ALIGNMENT CURVE DATA

CURVE #	DEG OF CURVE	DELTA	LENGTH	TANGENT DIST	RADIUS	PI	PC	PT
		151°12'58"				4+80.58		
		90°00'00"				4+91.45		
C6	358°05'55"	23°46'07"	6.64	3.37	16.00	5+06.29	5+02.93	5+09.56
		179°30'45"				5+47.22		
		179°50'22"				5+90.80		
		179°50'49"				6+38.27		
C7	2°25'44"	1°19'14"	54.36	27.18	2358.99	7+11.20	6+84.02	7+38.38
C8	125°55'29"	43°23'39"	34.46	18.10	45.50	7+56.49	7+38.38	7+72.84
C9	286°28'44"	59°56'40"	20.92	11.53	20.00	7+84.37	7+72.84	7+93.76
		105°09'30"				7+93.76		

LEGEND

○	EIP	⊛	CLEAN OUT
×	CALCULATED POINT	▭	CURB INLET
☼	LAMP POST	▥	GRATE INLET
Ⓢ	SANITARY SEWER MANHOLE	▪	YARD INLET
PP	POWER POLE	MW ○	MONITORING WELL
LP	LIGHT POLE	✧	LANDSCAPE LIGHT
WM □	WATER METER	B*	BOLLARDS
WV	WATER VALVE	GTS ○	GAS TESTING STATION
	FIRE HYDRANT	TPED □	TELEPHONE PEDESTAL

DocuSigned by: Mark Reich 58637F049AD84D7...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

REV. 8/24/15 PER NCDOT COMMENTS
REV. 7/29/15 PER NCDOT COMMENTS
REV. 4/8/15 ADDED WATTLE BELOW STRUCTURE NO. 10
REV. 4/1/15 ADDED WATTLE @ STRUCTURE NO. 5 & REVISED NORTH ARROW
REV. 3/13/15 REVISED PROFILE
REV. 1/27/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

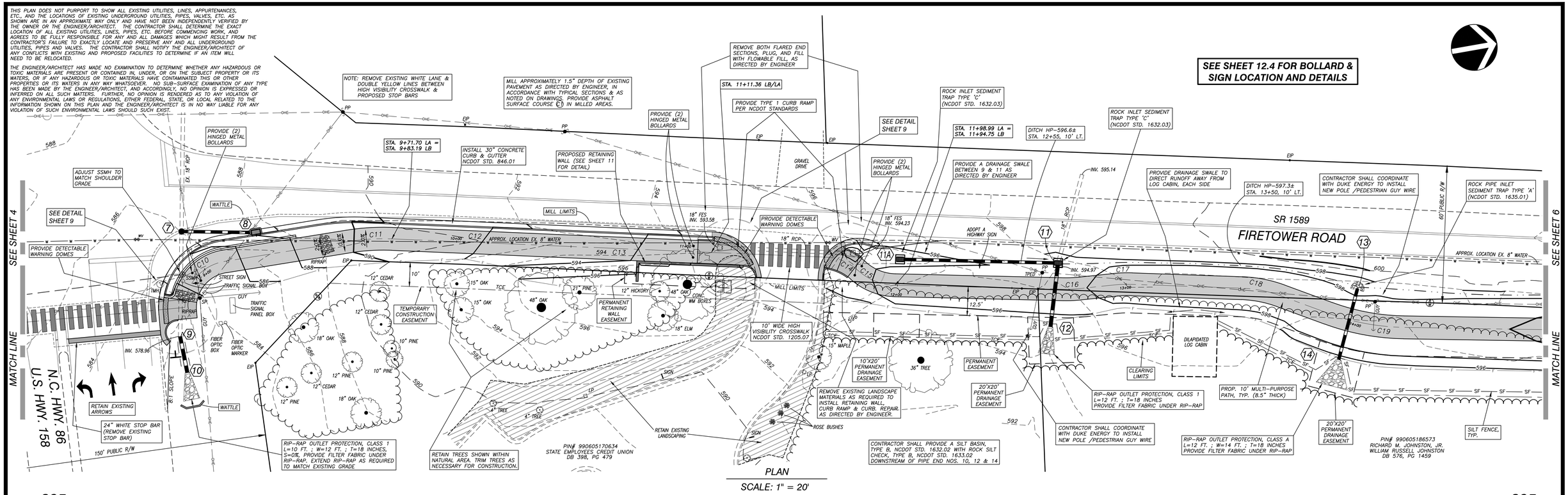
DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

NORTH AVENUE SIDEWALK & FIRETOWER ROAD MULTI-USE PATH
(FROM CHURCH STREET TO ±2400' NORTH OF NC HWY 86N)

JOB NO. 13069
DWG NAME: 13069(10153)BASE.DWG
SHEET NO. 4

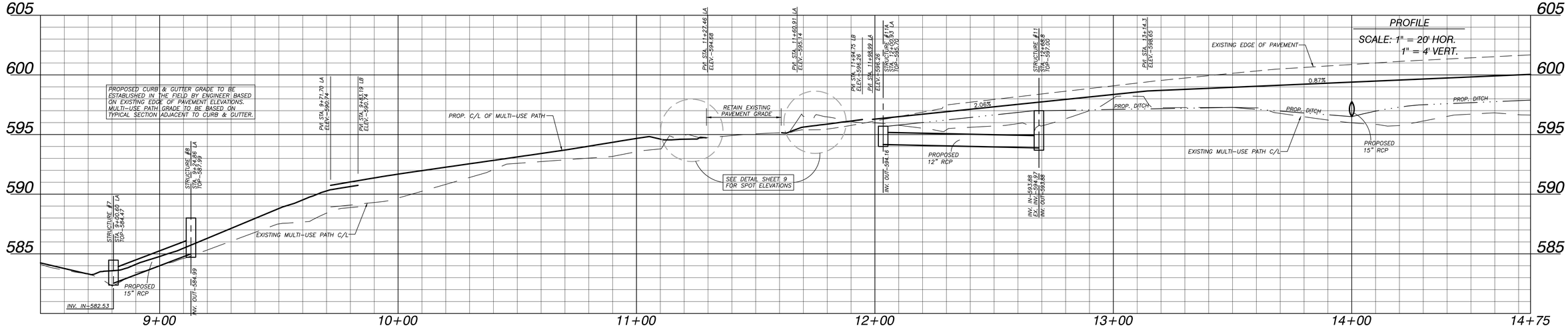
THIS PLAN DOES NOT PURPORT TO SHOW ALL EXISTING UTILITIES, LINES, APPURTENANCES, ETC., AND THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES, PIPES, VALVES, ETC. AS SHOWN ARE IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER/ARCHITECT. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES, LINES, PIPES, ETC. BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, PIPES AND VALVES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/ARCHITECT OF ANY CONFLICTS WITH EXISTING AND PROPOSED FACILITIES TO DETERMINE IF AN ITEM WILL NEED TO BE RELOCATED.

THE ENGINEER/ARCHITECT HAS MADE NO EXAMINATION TO DETERMINE WHETHER ANY HAZARDOUS OR TOXIC MATERIALS ARE PRESENT OR CONTAINED IN, UNDER, OR ON THE SUBJECT PROPERTY OR ITS WATERS, OR IF ANY HAZARDOUS OR TOXIC MATERIALS HAVE CONTAMINATED THIS OR OTHER PROPERTIES OR ITS WATERS IN ANY WAY WHATSOEVER. NO SUB-SURFACE EXAMINATION OF ANY TYPE HAS BEEN MADE BY THE ENGINEER/ARCHITECT, AND ACCORDINGLY, NO OPINION IS EXPRESSED OR INFERRED ON ALL SUCH MATTERS. FURTHER, NO OPINION IS RENDERED AS TO ANY VIOLATION OF ANY ENVIRONMENTAL LAWS OR REGULATIONS, EITHER FEDERAL, STATE, OR LOCAL RELATED TO THE INFORMATION SHOWN ON THIS PLAN AND THE ENGINEER/ARCHITECT IS IN NO WAY LIABLE FOR ANY VIOLATION OF SUCH ENVIRONMENTAL LAWS SHOULD SUCH EXIST.



PLAN

SCALE: 1" = 20'



MULTI-USE PATH NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NCDOT 2012 STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.
2. WHEN NECESSARY, RELOCATE ROADWAY SIGNS.
3. ADJUST UTILITIES, VALVES, METER BOXES AND MANHOLES AS REQUIRED TO MATCH ADJACENT GRADE.

LEGEND

○	EIP	⚘	CLEAN OUT
×	CALCULATED POINT	▭	CURB INLET
☼	LAMP POST	▥	GRATE INLET
Ⓢ	SANITARY SEWER MANHOLE	■	YARD INLET
PP	POWER POLE	MW	MONITORING WELL
LP	LIGHT POLE	✧	LANDSCAPE LIGHT
WM	WATER METER	B*	BOLLARDS
WV	WATER VALVE	GTS	GAS TESTING STATION
	FIRE HYDRANT	TPED	TELEPHONE PEDESTAL

STRUCTURE #	NCDOT STD. # /REMARKS	TYPE
⟨7⟩	840.34	
⟨8⟩	840.01	G
⟨9⟩	840.72	
⟨10⟩	PIPE END	
⟨11⟩	840.15	
⟨11A⟩	840.15	
⟨12⟩	PIPE END	
⟨13⟩	PIPE END	
⟨14⟩	PIPE END	

(SEE SHEET 2 FOR ADDITIONAL STORM DRAINAGE INFORMATION)

HORIZONTAL ALIGNMENT CURVE DATA

CURVE #	DEG OF CURVE	DELTA	LENGTH	TANGENT DIST	RADIUS	PI	PC	PT
		127°19'08"				8+80.47		
C10	279°29'30"	80°31'06"	28.81	17.36	20.50	8+97.83	8+80.47	9+09.28
C11	60°18'41"	11°26'49"	18.98	9.52	95.00	9+73.73	9+64.21	9+83.19 LB 9+71.70 LA
C12	0°22'47"	0°16'33"	72.63	36.31	15087.51	10+08.01	9+83.19 LB 9+71.70 LA	10+44.32
C13	0°13'48"	0°09'15"	67.04	33.52	24899.19	10+77.84	10+44.32	11+11.36
		169°20'27"				11+64.42		
C14	229°10'59"	28°54'59"	12.62	6.45	25.00	11+70.87	11+64.42	11+77.04
C15	229°10'59"	40°35'47"	17.71	9.25	25.00	11+86.28	11+77.04	11+94.75 LB 11+98.99 LA
C16	104°10'27"	7°21'25"	7.06	3.54	55.00	12+76.23	12+72.69	12+79.76
C17	104°10'27"	8°02'38"	7.72	3.87	55.00	12+98.62	12+94.75	13+02.47
C18	104°10'27"	18°08'22"	17.41	8.78	55.00	13+59.36	13+50.58	13+67.99
C19	57°17'45"	19°12'39"	33.53	16.92	100.00	14+07.16	13+90.24	14+23.76

SEE CROSS SECTION SHEETS 10.1-10.4 FOR ADDITIONAL INFORMATION

SEE SHEET 14.2 FOR CONSTRUCTION SEQUENCE

TOTAL DISTURBED AREA - 2.25 ACRES ±

DocuSigned by: Mark Reich 58637F0494DB4D7...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

REV. 8/24/15 PER NCDOT COMMENTS
REV. 7/29/15 PER NCDOT COMMENTS
REV. 4/8/15 ADDED WATTLE BELOW STRUCTURE NO. 10
REV. 4/1/15 REVISED NORTH ARROW
REV. 3/13/15 ADDED LA/LB STATIONS
REV. 1/27/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

NORTH AVENUE SIDEWALK & FIRETOWER ROAD MULTI-USE PATH
(FROM CHURCH STREET TO ±2400' NORTH OF NC HWY 86N)

JOB NO. 13069
DWG NAME: 13069(10153)BASE.DWG
SHEET NO. 5

THIS PLAN DOES NOT PURPORT TO SHOW ALL EXISTING UTILITIES, LINES, APPURTENANCES, ETC., AND THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES, PIPES, VALVES, ETC. AS SHOWN ARE IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER/ARCHITECT. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES, LINES, PIPES, ETC. BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, PIPES AND VALVES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/ARCHITECT OF ANY CONFLICTS WITH EXISTING AND PROPOSED FACILITIES TO DETERMINE IF AN ITEM WILL NEED TO BE RELOCATED.

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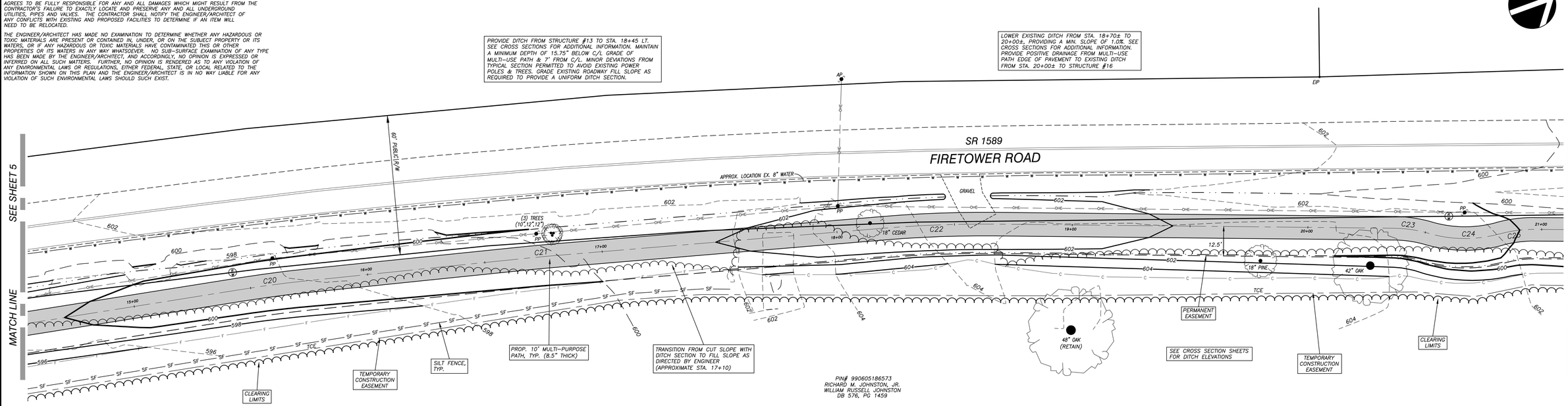
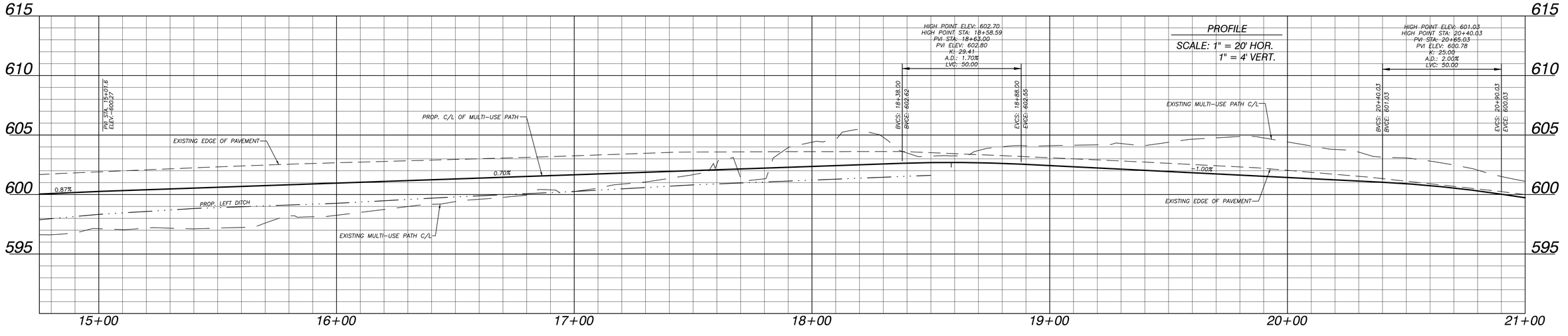


PLAN

SCALE: 1" = 20'



LEGEND

○	EIP	⊛	CLEAN OUT
×	CALCULATED POINT	▭	CURB INLET
☼	LAMP POST	▥	GRATE INLET
Ⓢ	SANITARY SEWER MANHOLE	▪	YARD INLET
PP	POWER POLE	MW ◯	MONITORING WELL
LP	LIGHT POLE	✧	LANDSCAPE LIGHT
WM □	WATER METER	B*	BOLLARDS
WV	WATER VALVE	GTS ○	GAS TESTING STATION
	FIRE HYDRANT	TPED □	TELEPHONE PEDESTAL

SEE CROSS SECTION SHEETS 10.1-10.4 FOR ADDITIONAL INFORMATION

SEE SHEET 14.2 FOR CONSTRUCTION SEQUENCE

TOTAL DISTURBED AREA - 2.25 ACRES ±

HORIZONTAL ALIGNMENT CURVE DATA

CURVE #	DEG OF CURVE	DELTA	LENGTH	TANGENT DIST	RADIUS	PI	PC	PT
C20	11°27'33"	3°10'55"	27.77	13.89	500.00	15+60.79	15+46.90	15+74.67
C21	11°27'33"	1°06'19"	9.64	4.82	500.00	16+74.19	16+69.37	16+79.01
C22	11°27'33"	5°20'57"	46.68	23.36	500.00	18+43.67	18+20.31	18+66.99
C23	104°10'27"	15°39'05"	15.02	7.56	55.00	20+44.07	20+36.51	20+51.53
C24	104°10'27"	31°32'48"	30.28	15.54	55.00	20+67.07	20+51.53	20+81.82
C25	104°10'27"	15°39'00"	15.02	7.56	55.00	20+89.37	20+81.82	20+96.84

MULTI-USE PATH NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NCDOT 2012 STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.
2. WHEN NECESSARY, RELOCATE ROADWAY SIGNS.
3. ADJUST UTILITIES, VALVES, METER BOXES AND MANHOLES AS REQUIRED TO MATCH ADJACENT GRADE.

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D REICH

DocuSigned by: Mark Reich 58637F049ADB4D7...

REV. 8/24/15 PER NCDOT COMMENTS
REV. 4/1/15 REVISED NORTH ARROW

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

NORTH AVENUE SIDEWALK & FIRETOWER ROAD MULTI-USE PATH
(FROM CHURCH STREET TO ±2400' NORTH OF NC HWY 86N)

JOB NO. 13069
DWG NAME: 13069(10153)BASE.DWG
SHEET NO. 6

THIS PLAN DOES NOT PURPORT TO SHOW ALL EXISTING UTILITIES, LINES, APPURTENANCES, ETC., AND THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES, PIPES, VALVES, ETC. AS SHOWN ARE IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER/ARCHITECT. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES, LINES, PIPES, ETC. BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, PIPES AND VALVES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/ARCHITECT OF ANY CONFLICTS WITH EXISTING AND PROPOSED FACILITIES TO DETERMINE IF AN ITEM WILL NEED TO BE RELOCATED.

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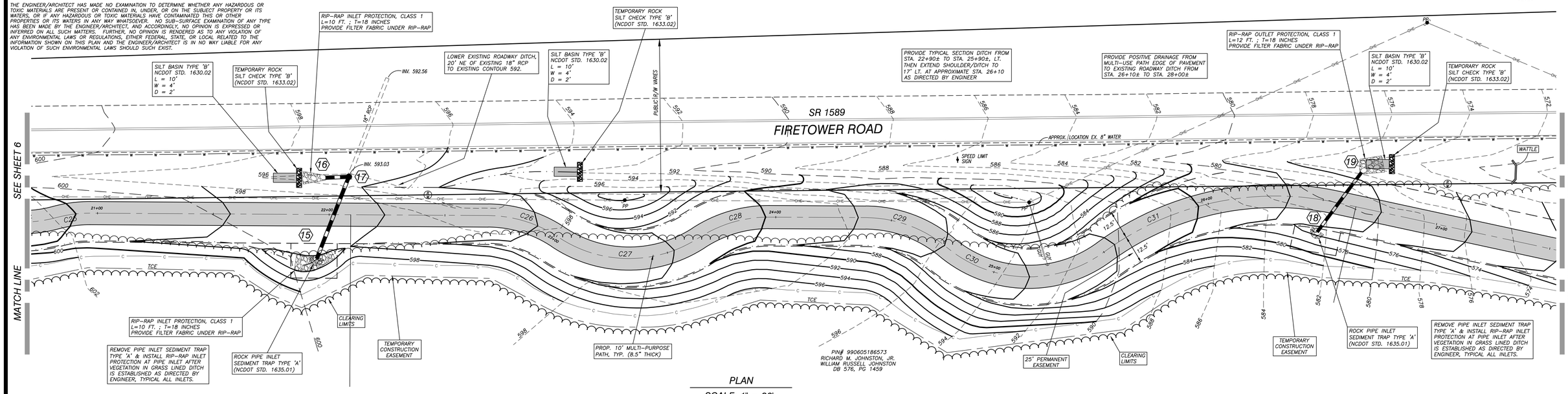
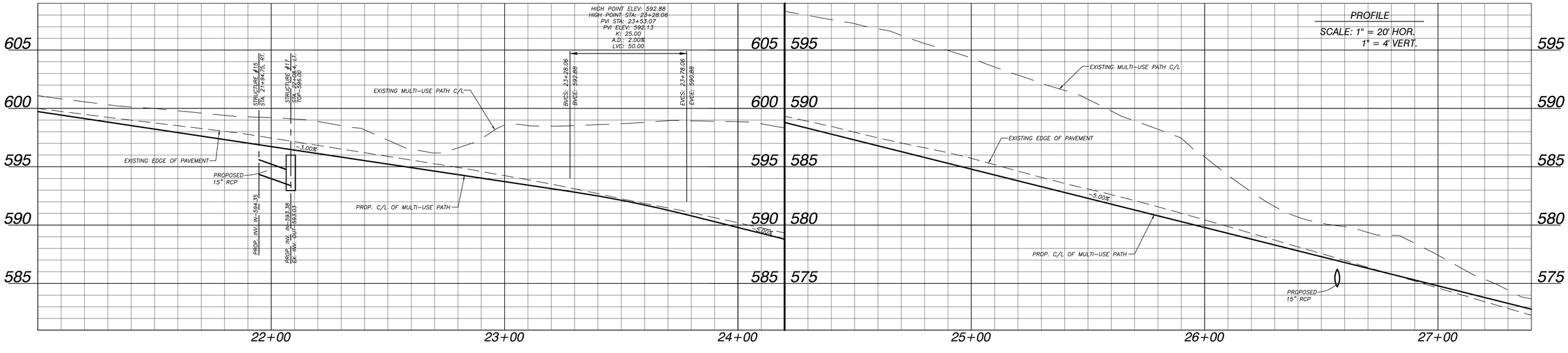


PLAN

SCALE: 1" = 20'



PROFILE

SCALE: 1" = 20' HOR.
1" = 4' VERT.

STRUCTURE #	NCDOT STD. # /REMARKS
15	PIPE END
16	PIPE END
17	840.34
18	PIPE END
19	PIPE END

(SEE SHEET 2 FOR ADDITIONAL STORM DRAINAGE INFORMATION)

SEE CROSS SECTION SHEETS 10.1-10.4 FOR ADDITIONAL INFORMATION

SEE SHEET 14.2 FOR CONSTRUCTION SEQUENCE

TOTAL DISTURBED AREA - 2.25 ACRES ±

HORIZONTAL ALIGNMENT CURVE DATA

CURVE #	DEG OF CURVE	DELTA	LENGTH	TANGENT DIST	RADIUS	PI	PC	PT
C26	104°10'27"	33°27'33"	32.12	16.53	55.00	22+85.15	22+68.62	23+00.73
C27	104°10'27"	66°57'41"	64.28	36.38	55.00	23+37.11	23+00.73	23+65.01
C28	104°10'27"	33°27'37"	32.12	16.53	55.00	23+81.54	23+65.01	23+97.13
C29	104°10'27"	39°35'18"	38.00	19.79	55.00	24+58.60	24+38.81	24+76.81
C30	104°10'27"	76°11'51"	73.14	43.12	55.00	25+19.94	24+76.81	25+49.96
C31	45°50'12"	48°30'56"	105.84	56.33	125.00	26+06.29	25+49.96	26+55.80

MULTI-USE PATH NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NCDOT 2012 STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.
2. WHEN NECESSARY, RELOCATE ROADWAY SIGNS.
3. ADJUST UTILITIES, VALVES, METER BOXES AND MANHOLES AS REQUIRED TO MATCH ADJACENT GRADE.

LEGEND

- EIP
- CALCULATED POINT
- LAMP POST
- SANITARY SEWER MANHOLE
- POWER POLE
- LIGHT POLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- CLEAN OUT
- CURB INLET
- GRATE INLET
- YARD INLET
- MONITORING WELL
- LANDSCAPE LIGHT
- BOLLARDS
- GAS TESTING STATION
- TELEPHONE PEDESTAL

DocuSigned by: Mark Reich 5863TF048AD84D7...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

REV. 8/24/15 PER NCDOT COMMENTS
REV. 4/1/15 ADDED E.C. DEVICE @ STRUCTURE NO. 15 & ADDED E.C. NOTE & REVISED NORTH ARROW

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

NORTH AVENUE SIDEWALK & FIRETOWER ROAD MULTI-USE PATH
(FROM CHURCH STREET TO ±2400' NORTH OF NC HWY 86N)

JOB NO. 13069
DWG NAME: 13069(10153)BASE.DWG
SHEET NO. 7

THIS PLAN DOES NOT PURPORT TO SHOW ALL EXISTING UTILITIES, LINES, APPURTENANCES, ETC., AND THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES, PIPES, VALVES, ETC. AS SHOWN ARE IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER/ARCHITECT. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES, LINES, PIPES, ETC. BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, PIPES AND VALVES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/ARCHITECT OF ANY CONFLICTS WITH EXISTING AND PROPOSED FACILITIES TO DETERMINE IF AN ITEM WILL NEED TO BE RELOCATED.

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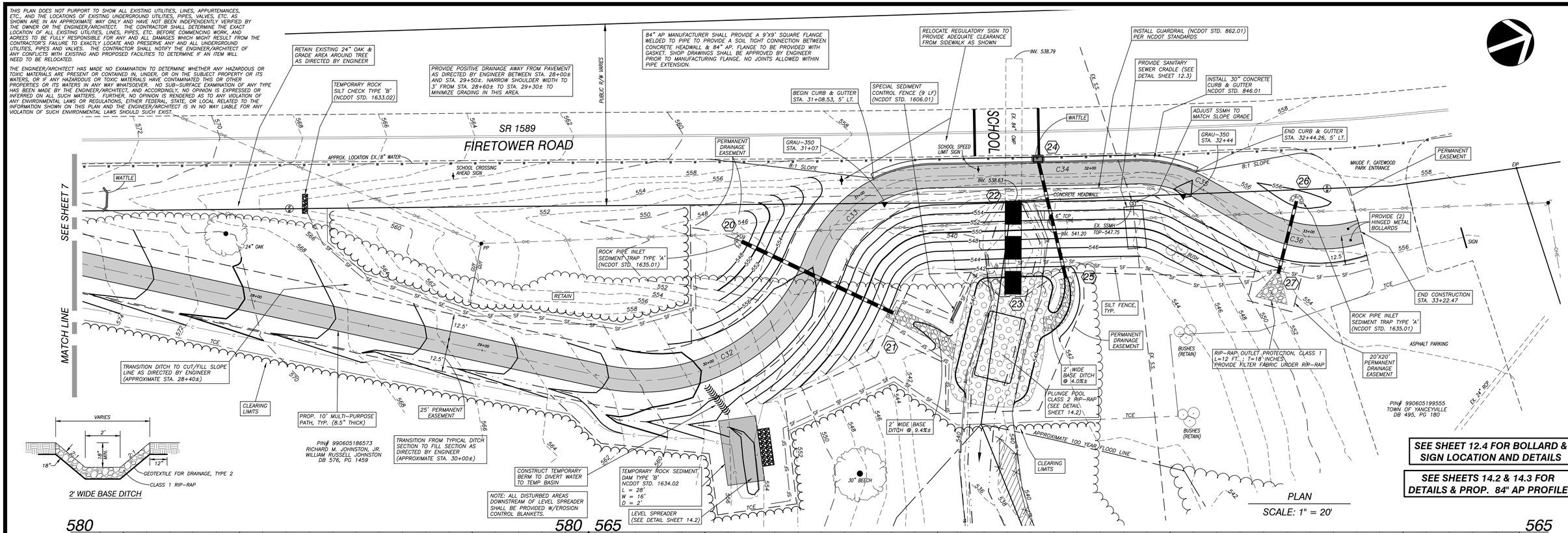
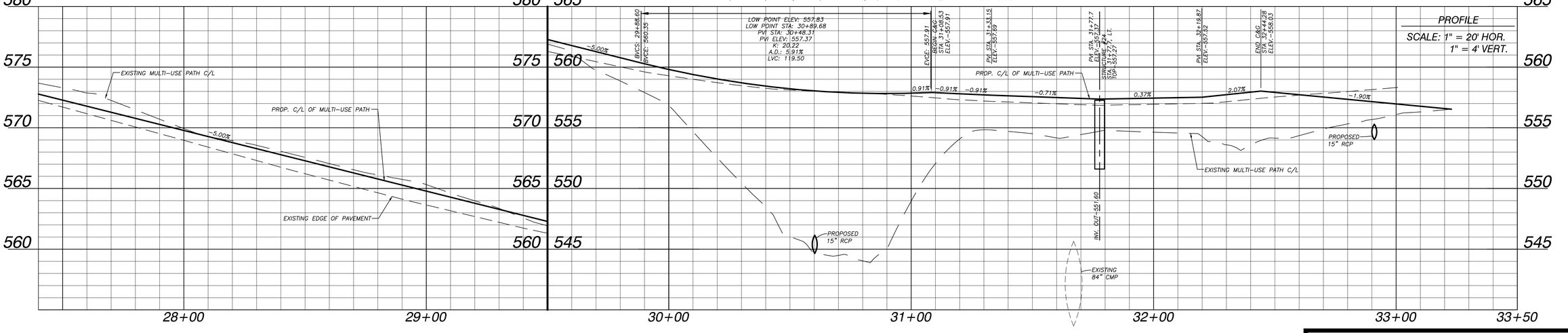


PLAN
SCALE: 1" = 20'

SEE SHEET 12.4 FOR BOLLARD & SIGN LOCATION AND DETAILS

SEE SHEETS 14.2 & 14.3 FOR DETAILS & PROP. 84" AP PROFILE



LEGEND

- EIP
- CALCULATED POINT
- LAMP POST
- SANITARY SEWER MANHOLE
- POWER POLE
- LIGHT POLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- CLEAN OUT
- CURB INLET
- GRATE INLET
- YARD INLET
- MONITORING WELL
- LANDSCAPE LIGHT
- BOLLARDS
- GAS TESTING STATION
- TELEPHONE PEDESTAL

STRUCTURE #	NCDOT STD. # /REMARKS	TYPE
20	PIPE END	
21	PIPE END	
22	PIPE END	
23	PIPE END	
24	840.01	E
25	PIPE END	
26	PIPE END	
27	PIPE END	

(SEE SHEET 2 FOR ADDITIONAL STORM DRAINAGE INFORMATION)

HORIZONTAL ALIGNMENT CURVE DATA

CURVE #	DEG OF CURVE	DELTA	LENGTH	TANGENT DIST	RADIUS	PI	PC	PT
C32	71°37'11"	81°43'45"	114.12	69.21	80.00	30+21.99	29+52.78	30+66.89
C33	104°10'27"	68°39'28"	65.91	37.56	55.00	31+04.45	30+66.89	31+32.80
C34	0°36'59"	0°32'04"	86.74	43.37	9297.38	31+76.17	31+32.80	32+19.54
C35	104°10'27"	30°31'47"	29.31	15.01	55.00	32+34.55	32+19.54	32+48.85
C36	104°10'27"	43°31'35"	41.78	21.96	55.00	32+99.74	32+77.78	33+19.56

SEE CROSS SECTION SHEETS 10.1-10.4 FOR ADDITIONAL INFORMATION

SEE SHEET 14.2 FOR CONSTRUCTION SEQUENCE

TOTAL DISTURBED AREA - 2.25 ACRES ±

MULTI-USE PATH NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NCDOT 2012 STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.
2. WHEN NECESSARY, RELOCATE ROADWAY SIGNS.
3. ADJUST UTILITIES, VALVES, METER BOXES AND MANHOLES AS REQUIRED TO MATCH ADJACENT GRADE.

DocuSigned by: Mark Reich 58637F049ADB4...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

REV. 8/24/15 PER NCDOT COMMENTS
REV. 4/1/15 REVISED 84" AP PROFILE NOTE & NORTH ARROW, SEDIMENT TRAP & NOTES
REV. 3/13/15 ADDED S.S. CRADLE & 84" AP PROFILE NOTES
REV. 1/27/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

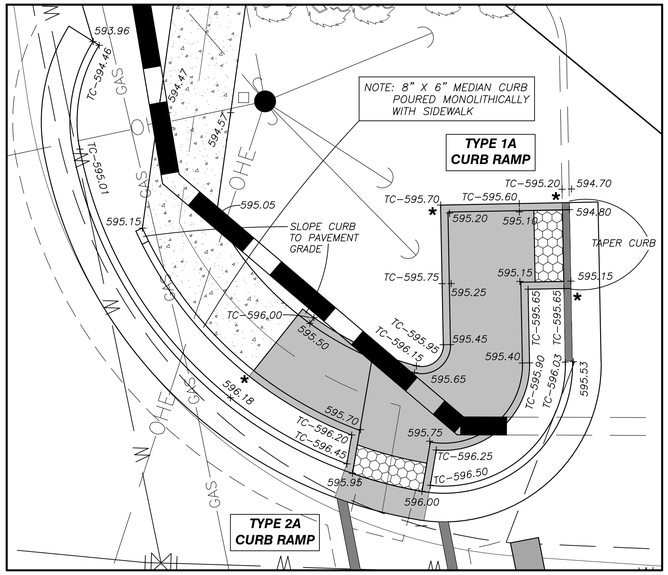
PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

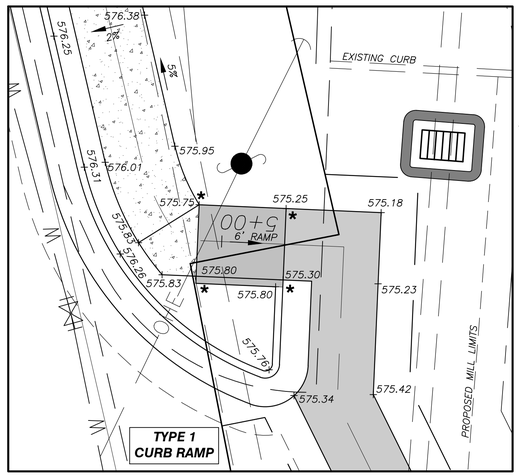
alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14	NORTH AVENUE SIDEWALK & FIRETOWER ROAD MULTI-USE PATH (FROM CHURCH STREET TO ±2400' NORTH OF NC HWY 86N)	JOB NO. 13069
DRAWN BY: WDF		DWG NAME: 13069(10153)BASE.DWG
CHECKED BY: MDR		SHEET NO. 8



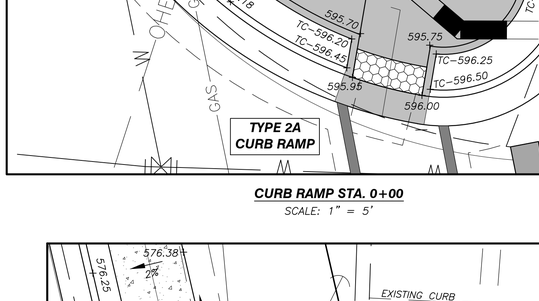
CURB RAMP STA. 0+00

SCALE: 1" = 5'



CURB RAMP STA. 4+96±

SCALE: 1" = 5'



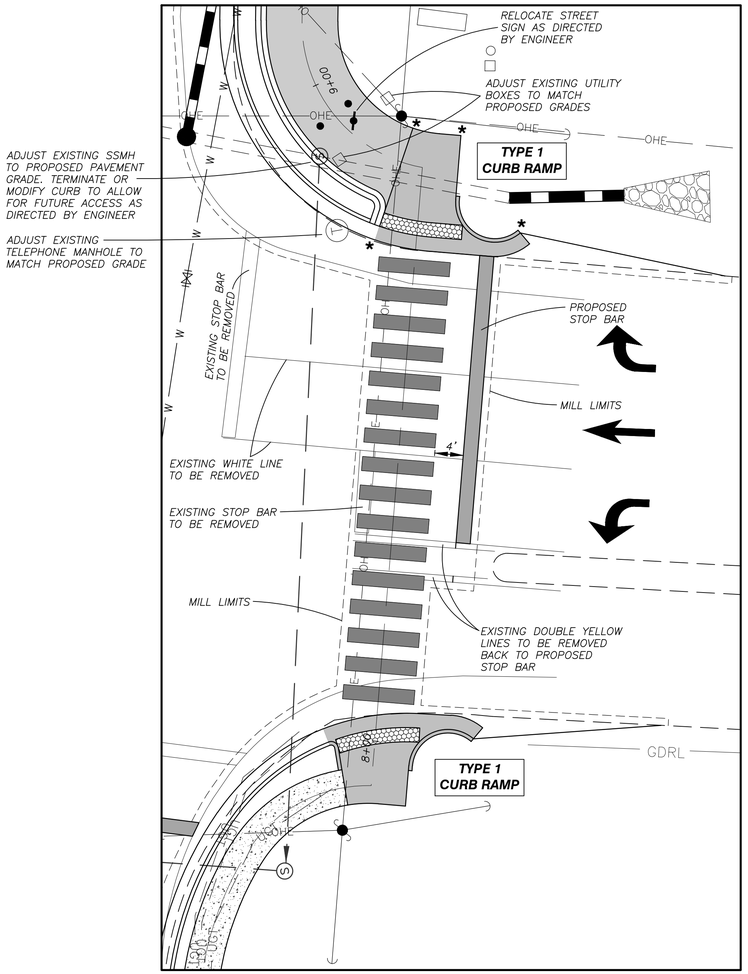
CURB RAMP STA. 8+04±

SCALE: 1" = 5'

3 TOP ELEV.-575.13±

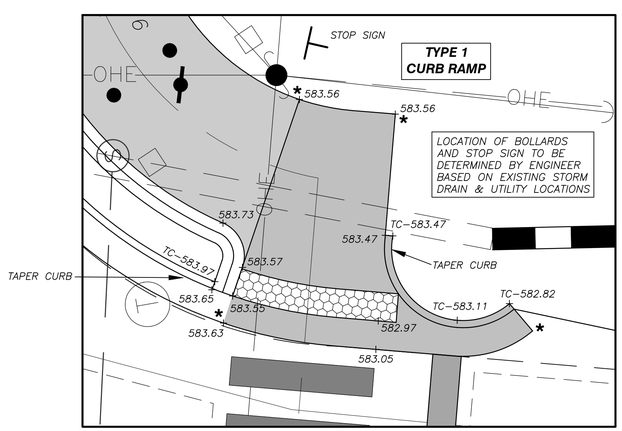
NOTE: PROVIDE POSITIVE DRAINAGE (1% MIN.) TO DROP INLET #3 FROM ALL EDGES OF PROPOSED ASPHALT IN MILLED AREAS

*** CURB RAMP PAY LIMITS**



PAVEMENT MARKING DETAIL

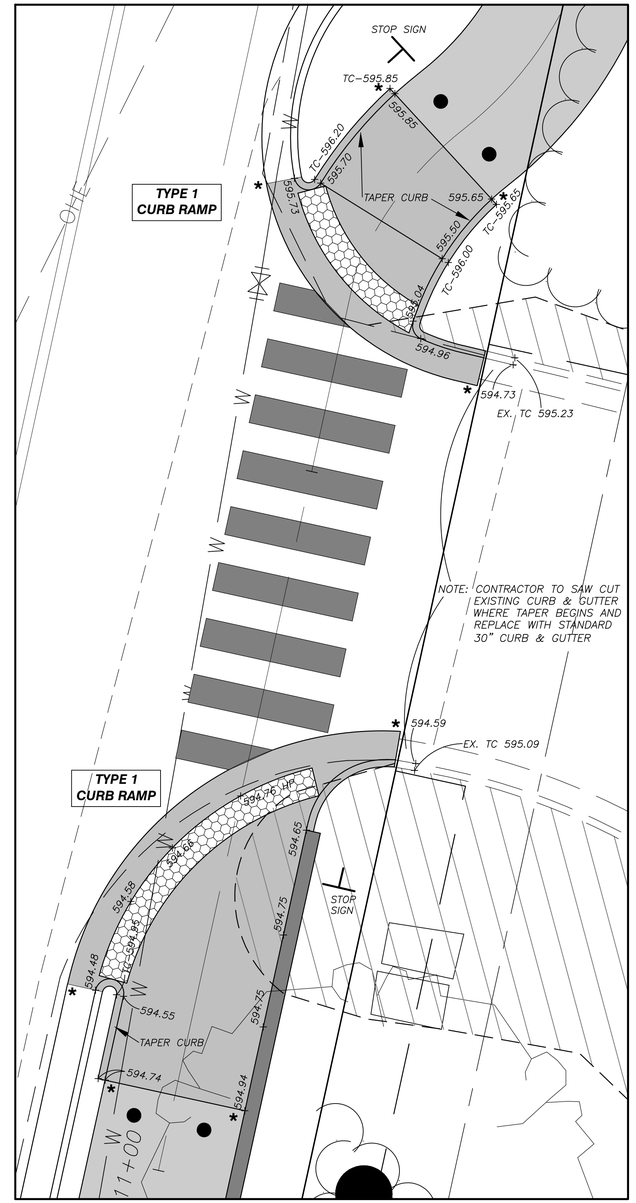
SCALE: 1" = 10'



CURB RAMP STA. 8+69±

SCALE: 1" = 5'

NOTE: SEE SHEETS 12.3 & 12.4 FOR ADDITIONAL CURB RAMP DETAILS & NOTES. CURB RAMPS WILL BE PAID FOR AT CONTRACT UNIT PRICE FOR EACH "CURB RAMP" REGARDLESS OF TYPE AND PAY LIMITS AS SHOWN ON DRAWINGS.



CURB RAMP STA. 11+05± & STA. 11+75±

SCALE: 1" = 5'

REV. 7/31/15 PER NCDOT COMMENTS
REV. 1/27/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DocuSigned by: Mark Reich
NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

DATE:	JOB NO.
8/15/14	13069
DRAWN BY: WDF	DWG NAME: 13069(10153)BASE.DWG
CHECKED BY: MDR	SHEET NO. 9

CURB RAMP & PAVEMENT MARKING DETAILS

SCALES

HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'

REV. 1/27/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

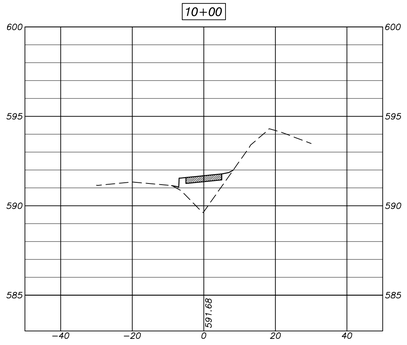
TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

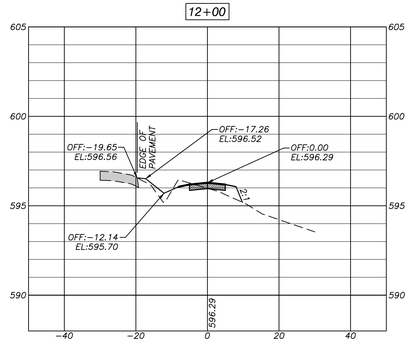
alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road — p.o. box 1179
burlington, n.c. 27215 — 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14	CROSS SECTIONS	JOB NO. 13069
DRAWN BY: WDF		DWG NAME: 13069(10153)BASE.DWG
CHECKED BY: MDR		SHEET NO. 10.1

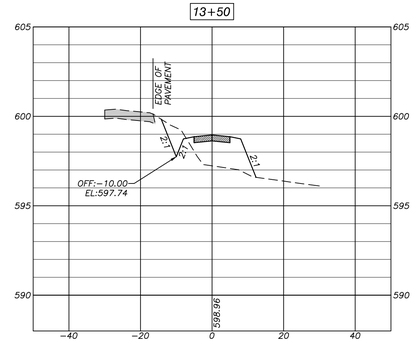
10+00



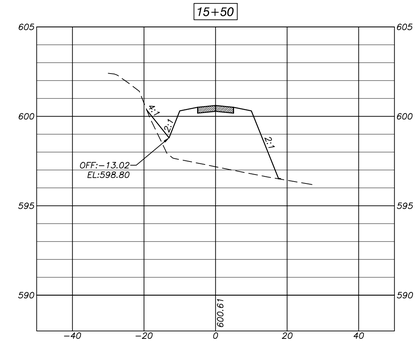
12+00



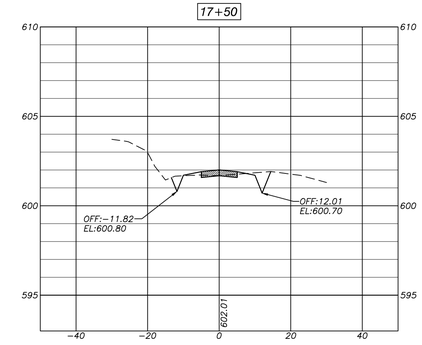
13+50



15+50



17+50



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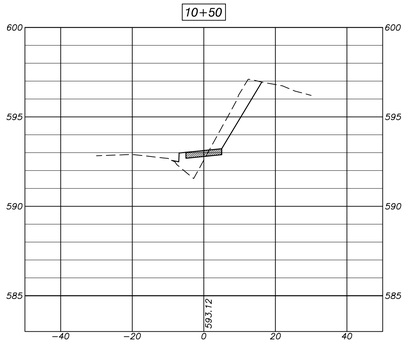

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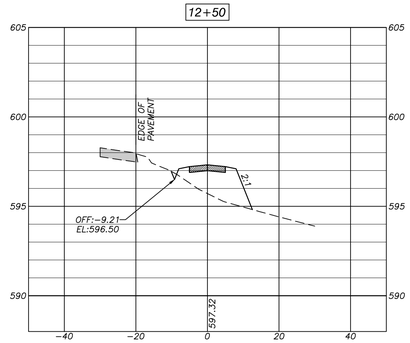

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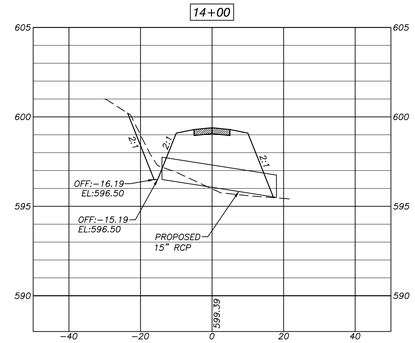

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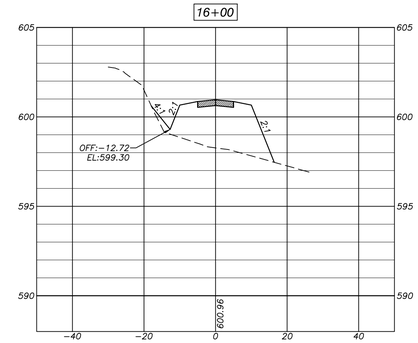
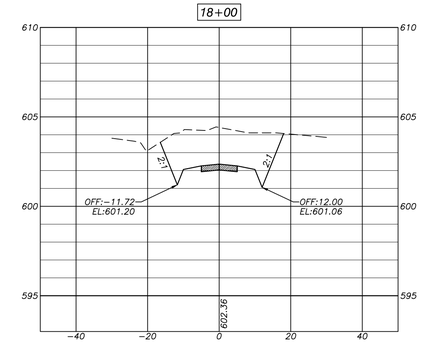


18+00



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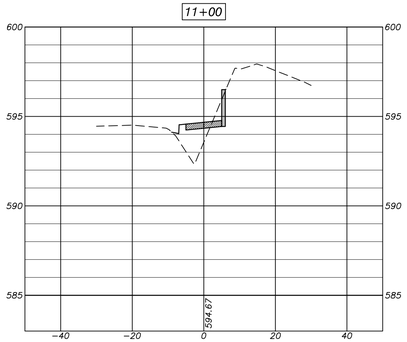

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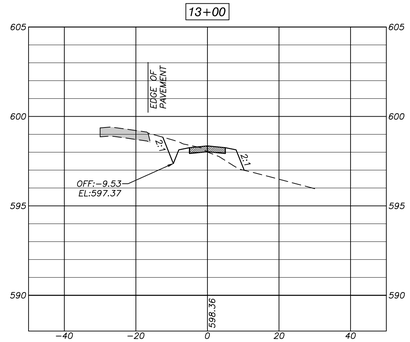

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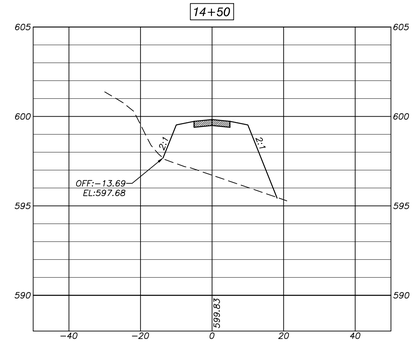

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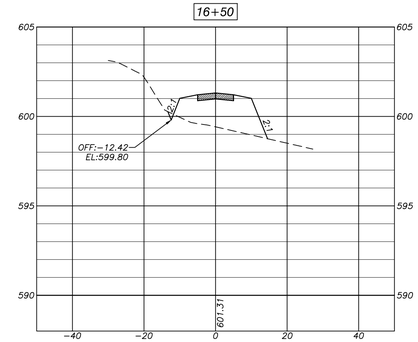

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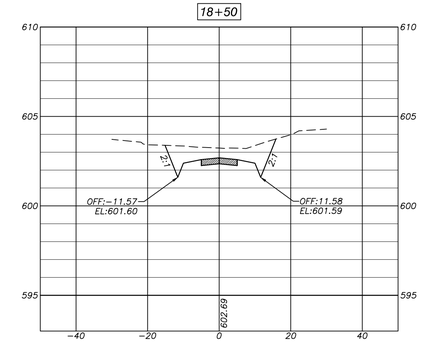

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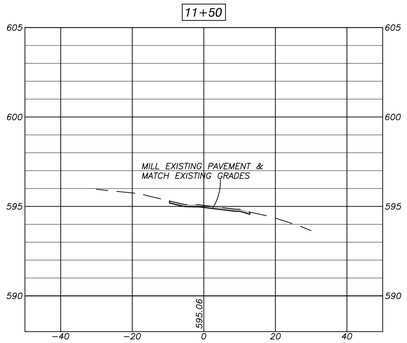

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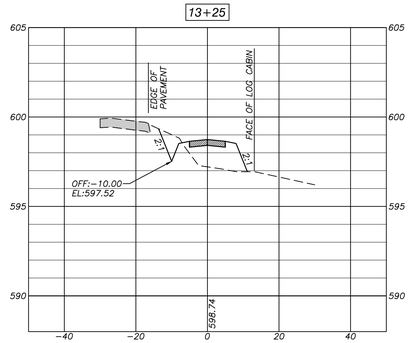

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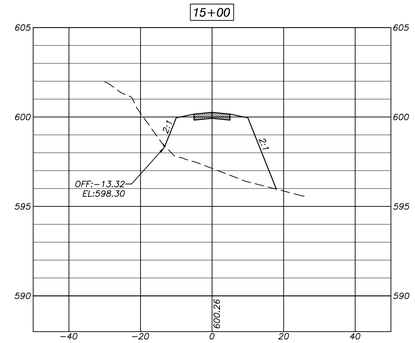

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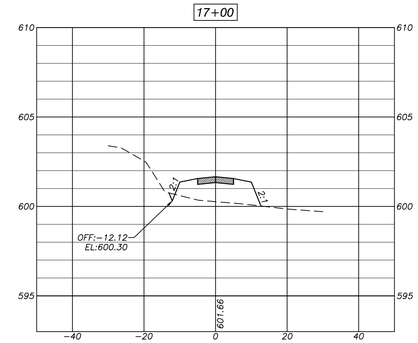


SCALES

HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'

DocuSigned by: Mark Reich
58637F049ADB4D0...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

REV. 1/27/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

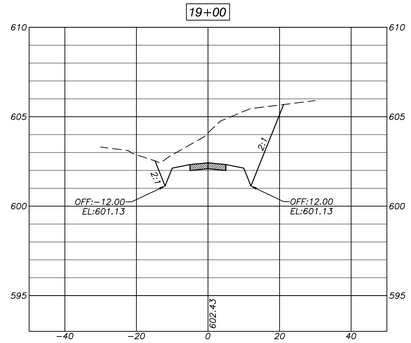
YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

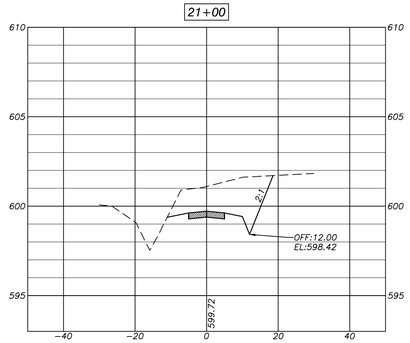
alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

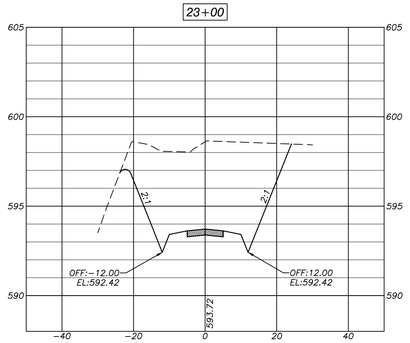
DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

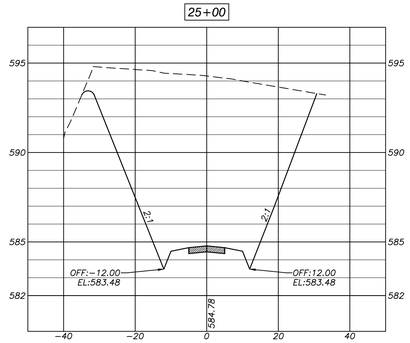
CROSS SECTIONS

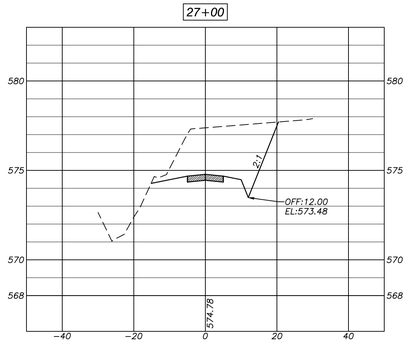
JOB NO. 13069
DWG NAME: 13069(10153)BASE.DWG
SHEET NO. 10.2

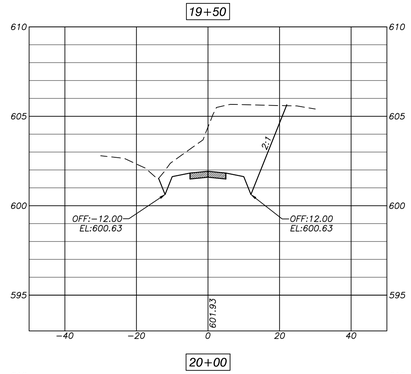


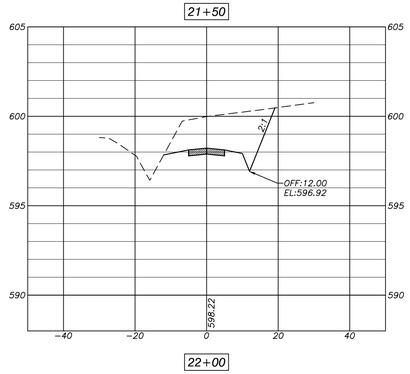


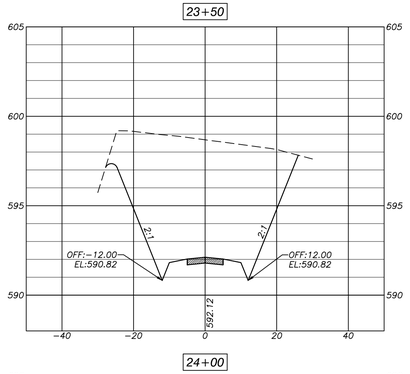


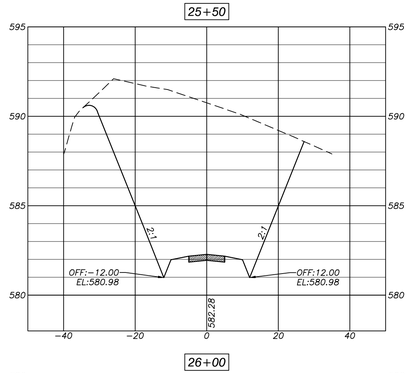


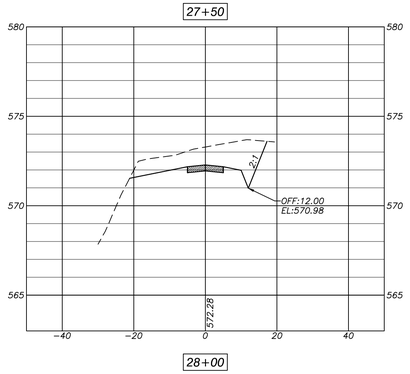


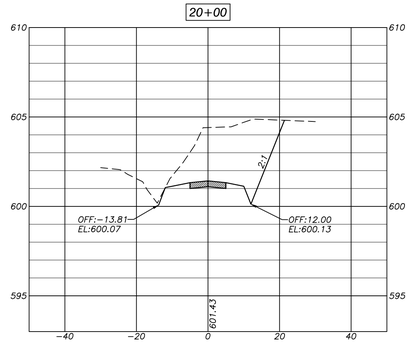


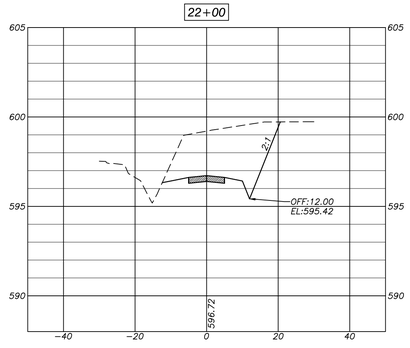


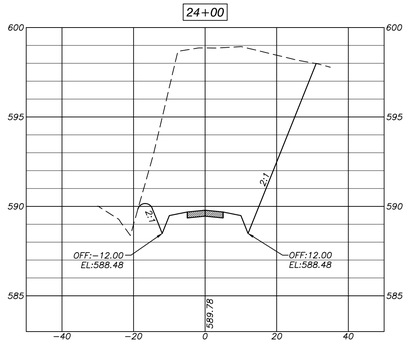


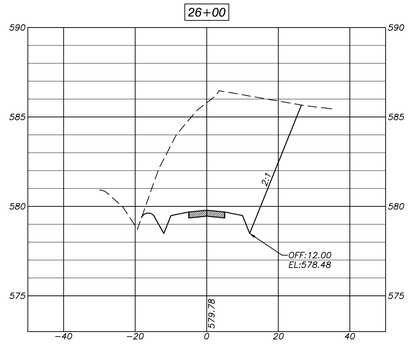


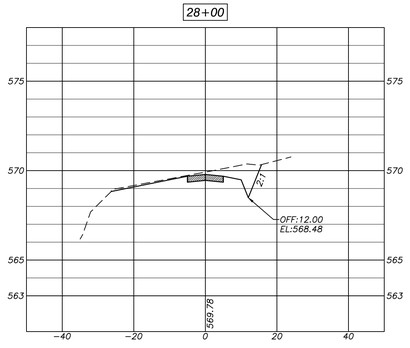


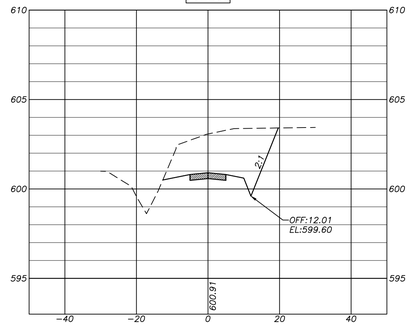


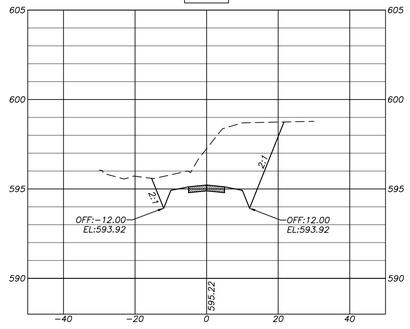


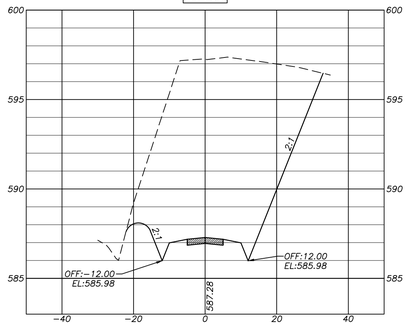


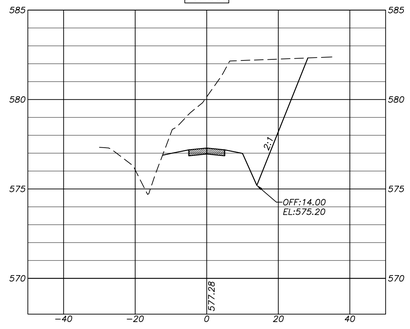












SCALES

HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'

DocuSigned by:
Mark Reich
58637F049AD84D7...

NORTH CAROLINA
PROFESSIONAL
SEAL
12634
ENGINEER
MARK D. REICH

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

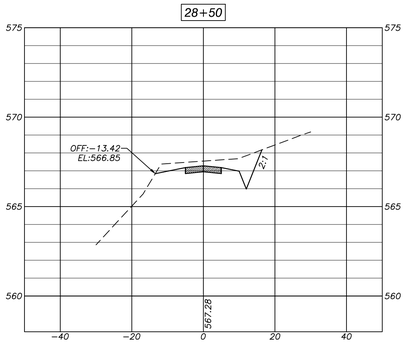
TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

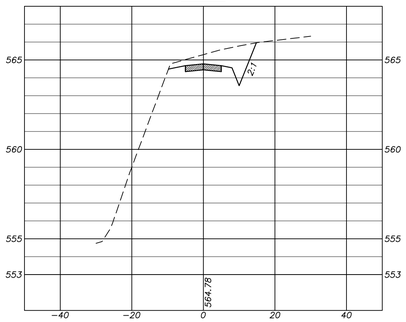
alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14	CROSS SECTIONS	JOB NO. 13069
DRAWN BY: WDF		DWG NAME: 13069(10153)BASE.DWG
CHECKED BY: MDR		SHEET NO. 10.3

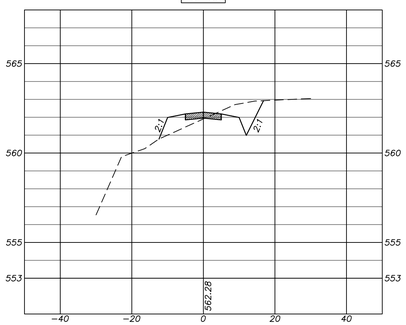
28+50



29+00



29+50



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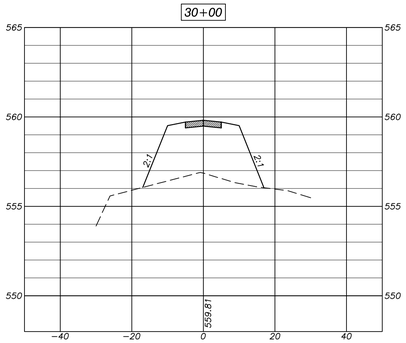

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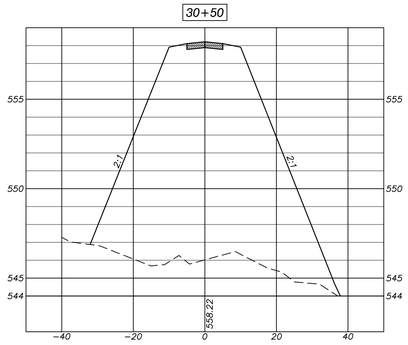

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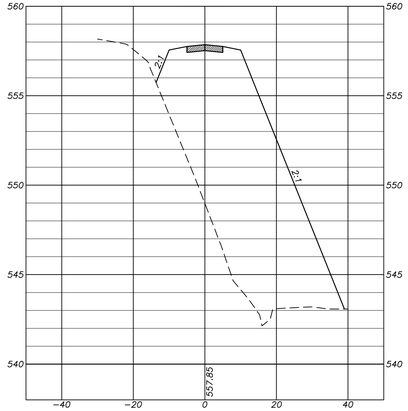

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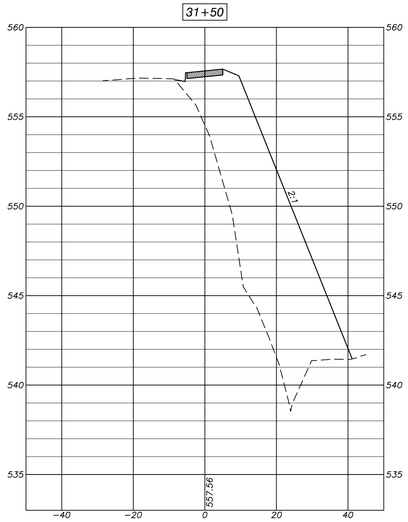

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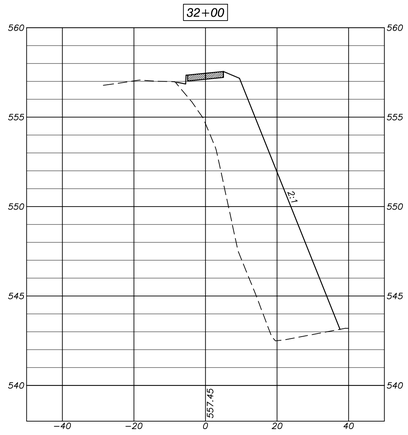

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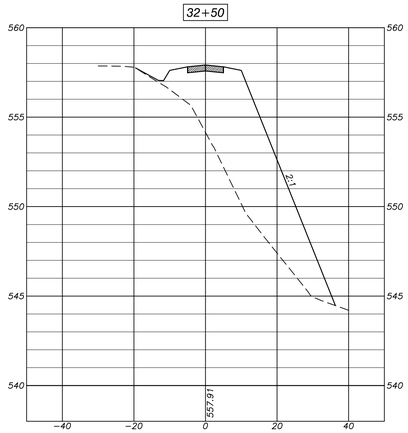

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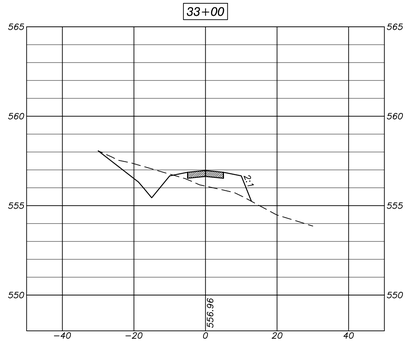


SCALES

HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'

DocuSigned by:
Mark Reich
58637F048ADB4...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

CROSS SECTIONS

JOB NO. 13069
DWG NAME: 13069(10153)BASE.DWG
SHEET NO. 10.4

LEGEND :

TOW = TOP OF WALL

TOF = TOP OF FOOTING

AREA OF RETAINING WALL ABOVE GRADE

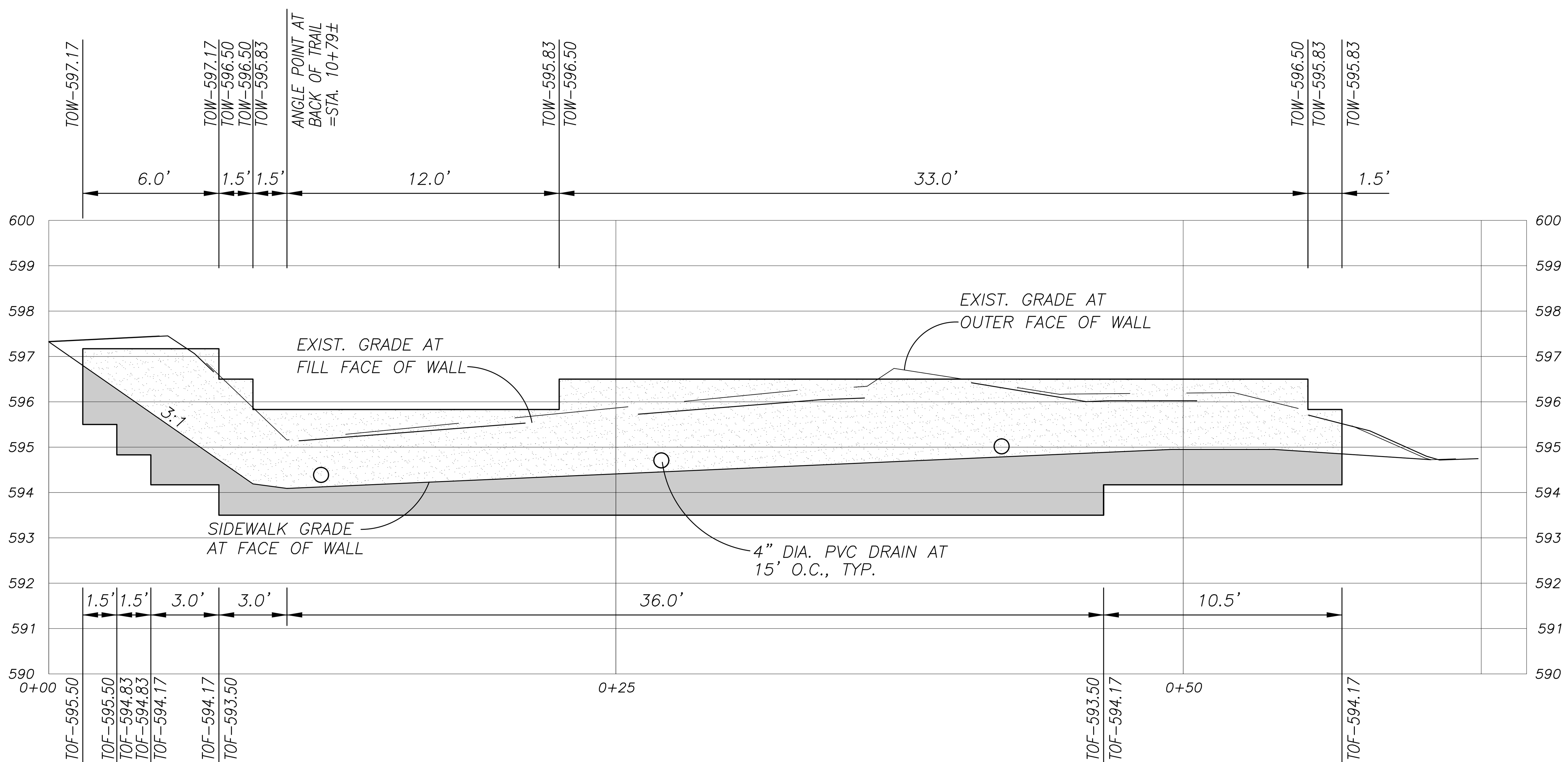
AREA OF RETAINING WALL BELOW GRADE

SEGMENTAL RETAINING WALL NOTES:

1. CONTRACTOR SHALL PROVIDE ENGINEER WITH SHOP DRAWINGS.
2. OWNER TO SELECT COLOR FROM STANDARD COLORS OFFERED BY MANUFACTURER.

STATIONS PROVIDED ARE CENTERLINE OF RETAINING WALL. STEPS IN TOP OF WALL AND BOTTOM OF WALL PROVIDED IN 1.5' INCREMENTS. ACTUAL LOCATION OF POINTS OF CURVATURE (PC) AND TANGENCY (PT) MAY VARY TO ACCOUNT FOR VARIANCES OF SEGMENTAL SECTION AS WELL AS BEGINNING OR ENDING OF WALL LOCATIONS (0.5±).

	ABOVE GRADE	BELOW GRADE	TOTAL AREA
RETAINING WALL NO. 1 :	93.9 S.F.	52.4 S.F.	146.3 S.F.



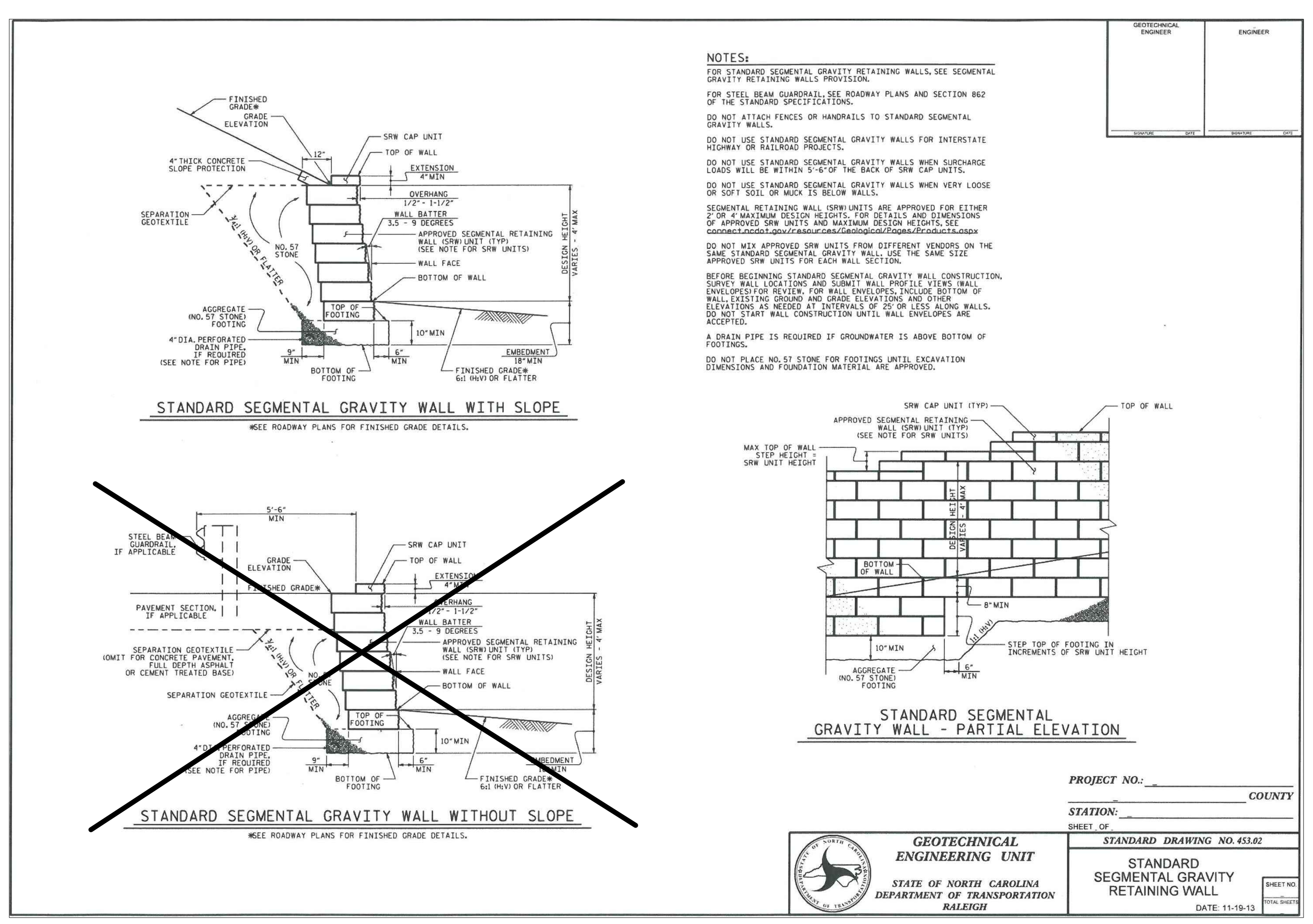
RETAINING WALL NO. 1

SCALES

HORIZONTAL : 1" = 4'

VERTICAL : 1" = 2'

SEE SHEET 5 FOR PLAN VIEW



NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

DocuSigned by: Mark Reich 58637F049ADB4D...

REV. 8/24/15 PER NCDOT COMMENTS
REV. 1/27/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

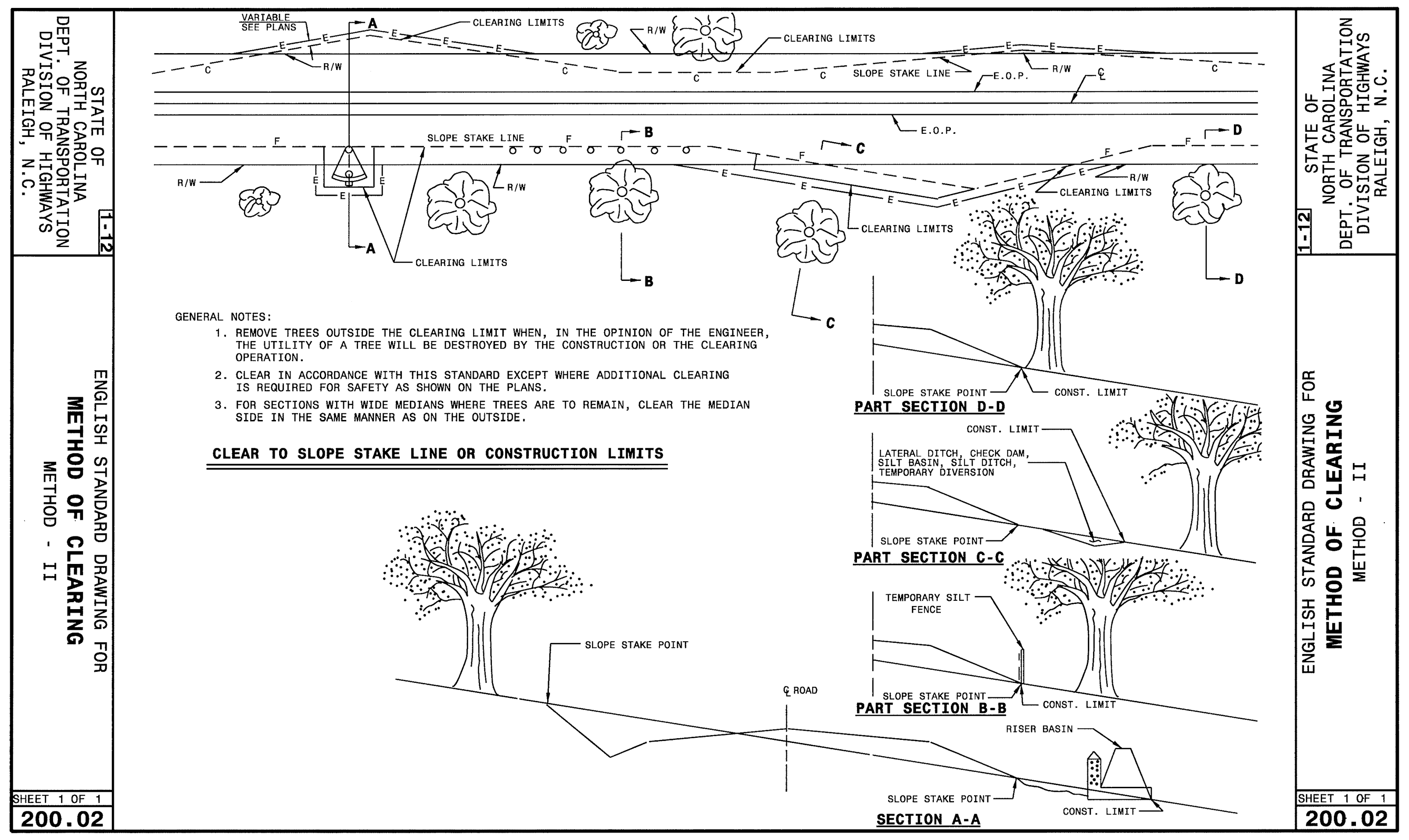
PROPOSED SIDEWALK IMPROVEMENTS FOR

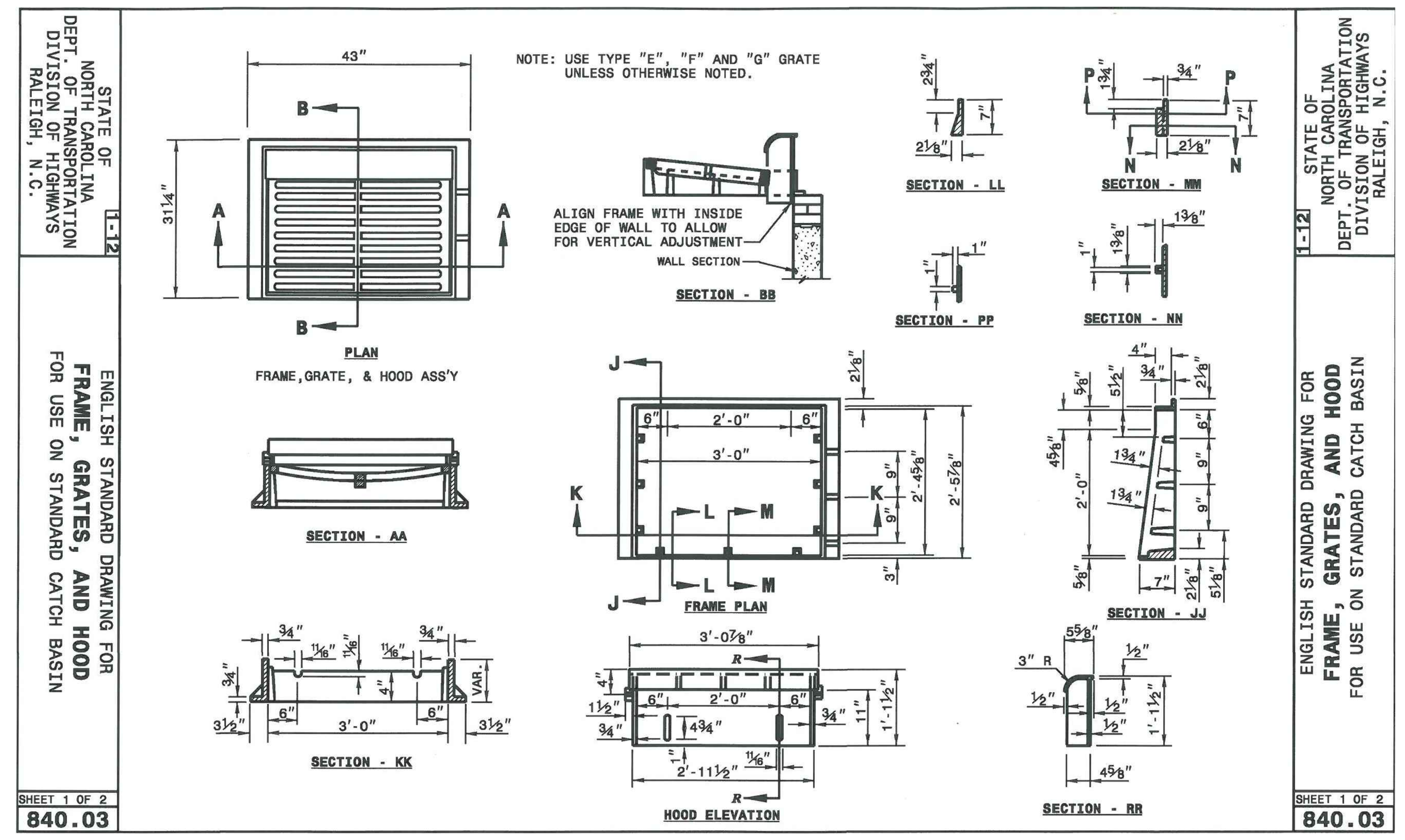
TOWN OF YANCEYVILLE

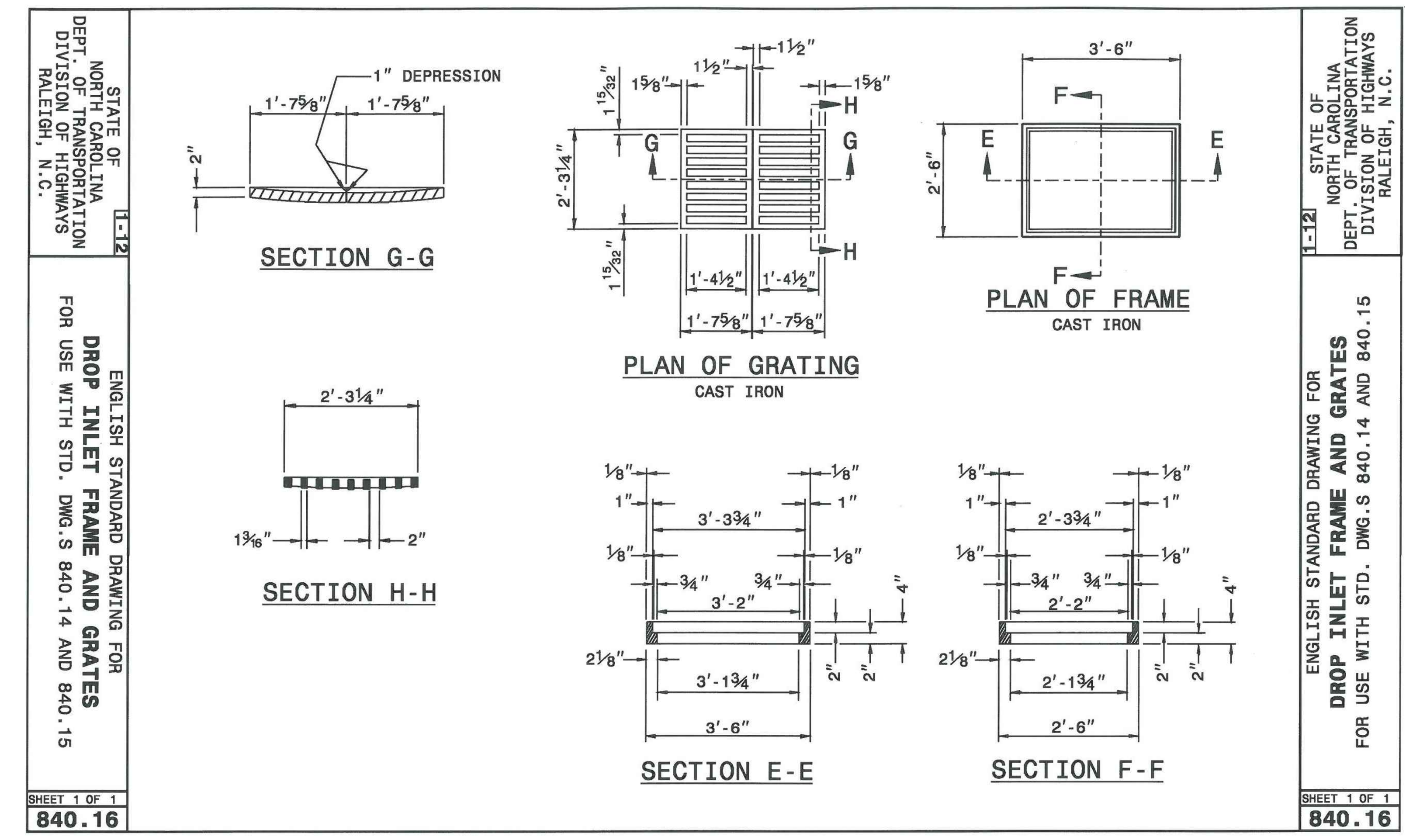
YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

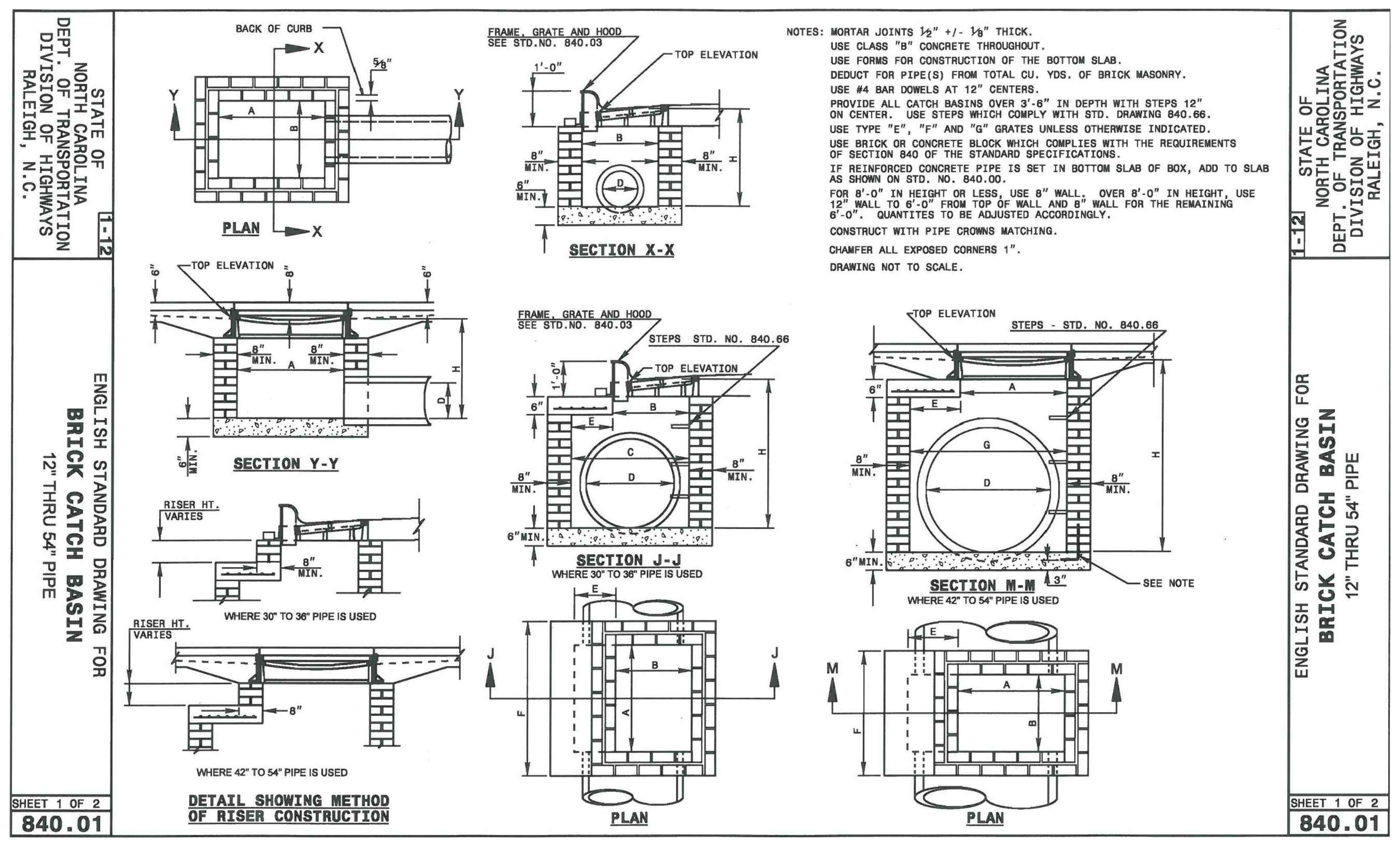
alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road, burlington, n.c. 27215 — p.o. box 1179, 336/226-5534
Firm's Engineering License No. F-0203

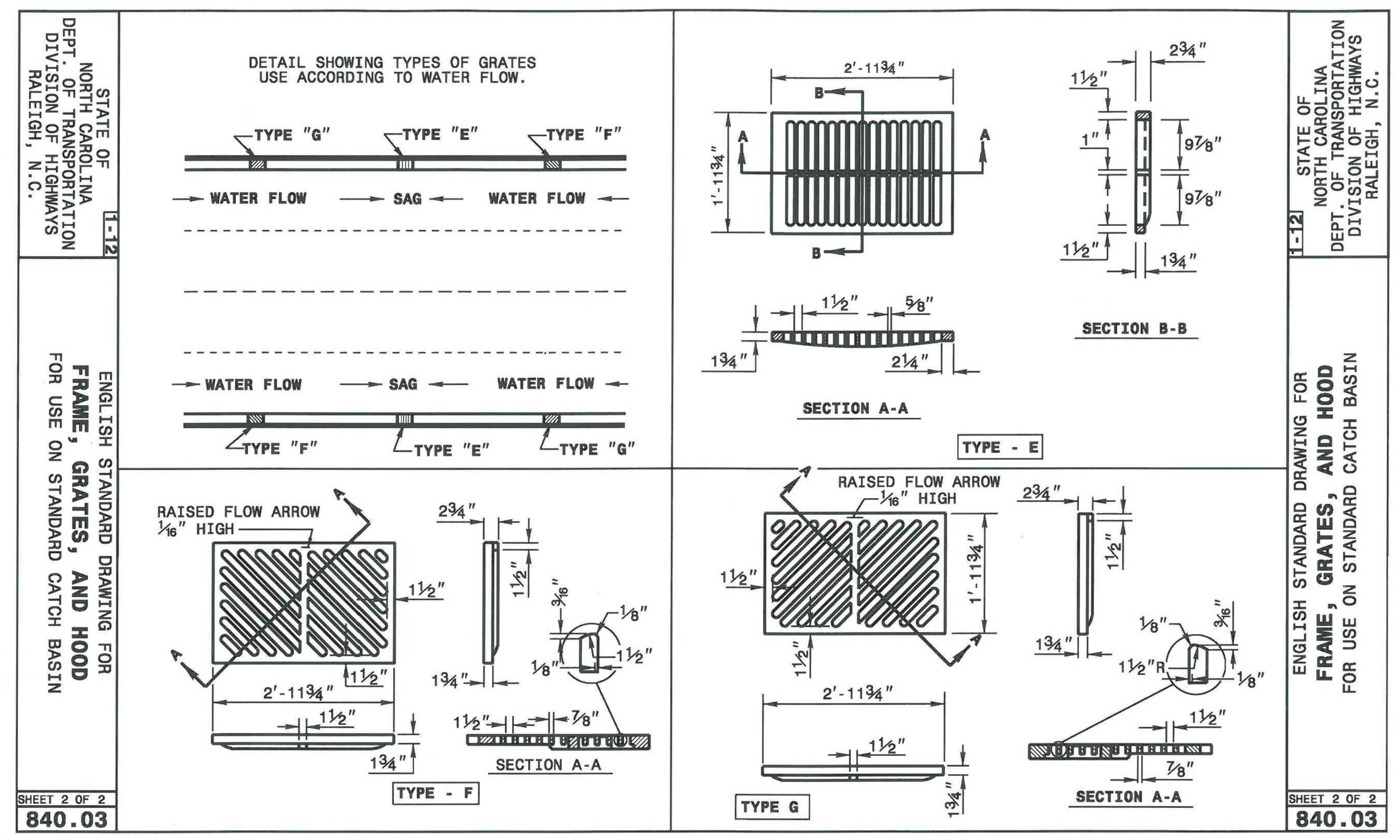
DATE: 8/15/14	RETAINING WALL DETAILS	JOB NO. 13069
DRAWN BY: WDF		DWG NAME: 13069(10153)BASE.DWG
CHECKED BY: MDR		SHEET NO. 11

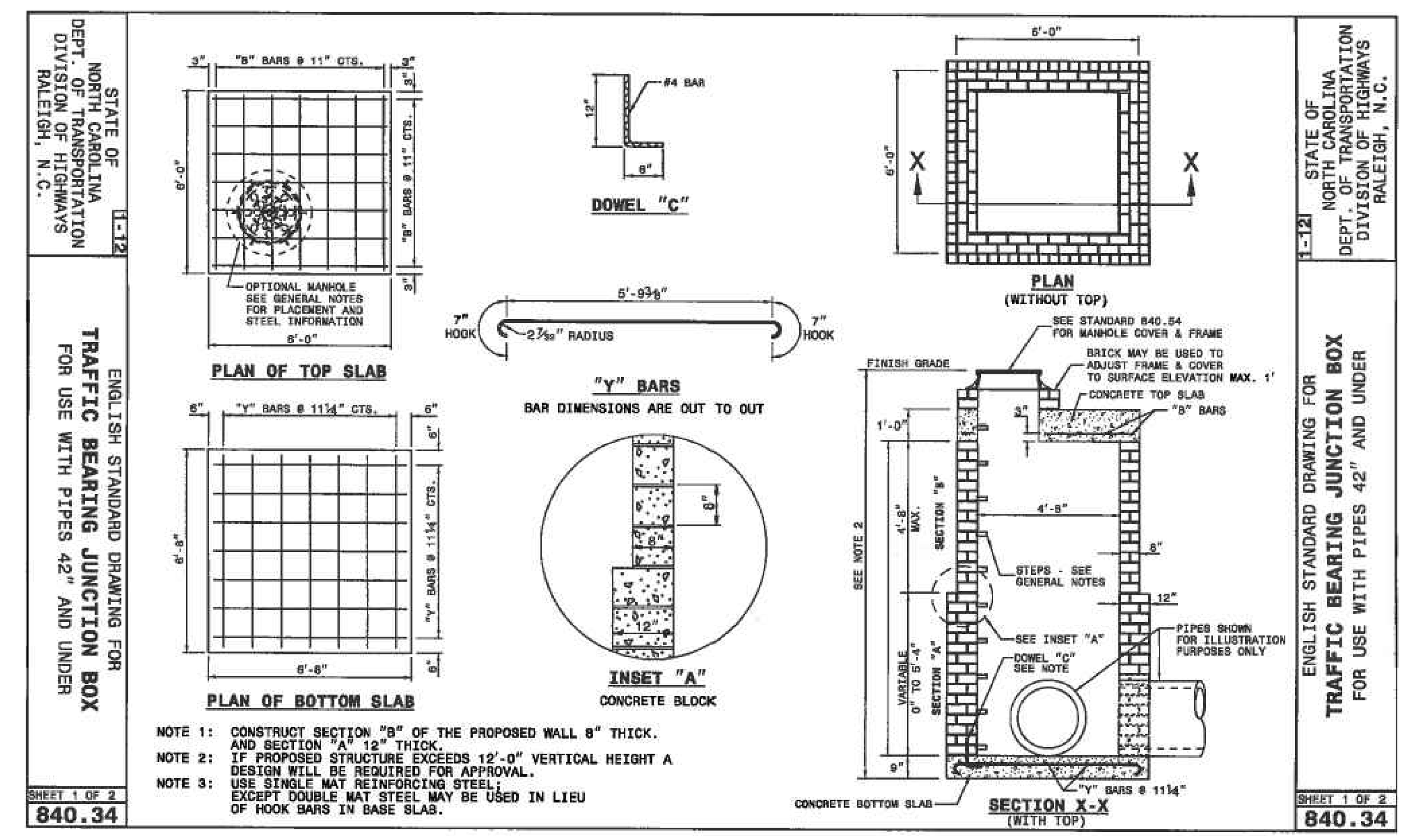


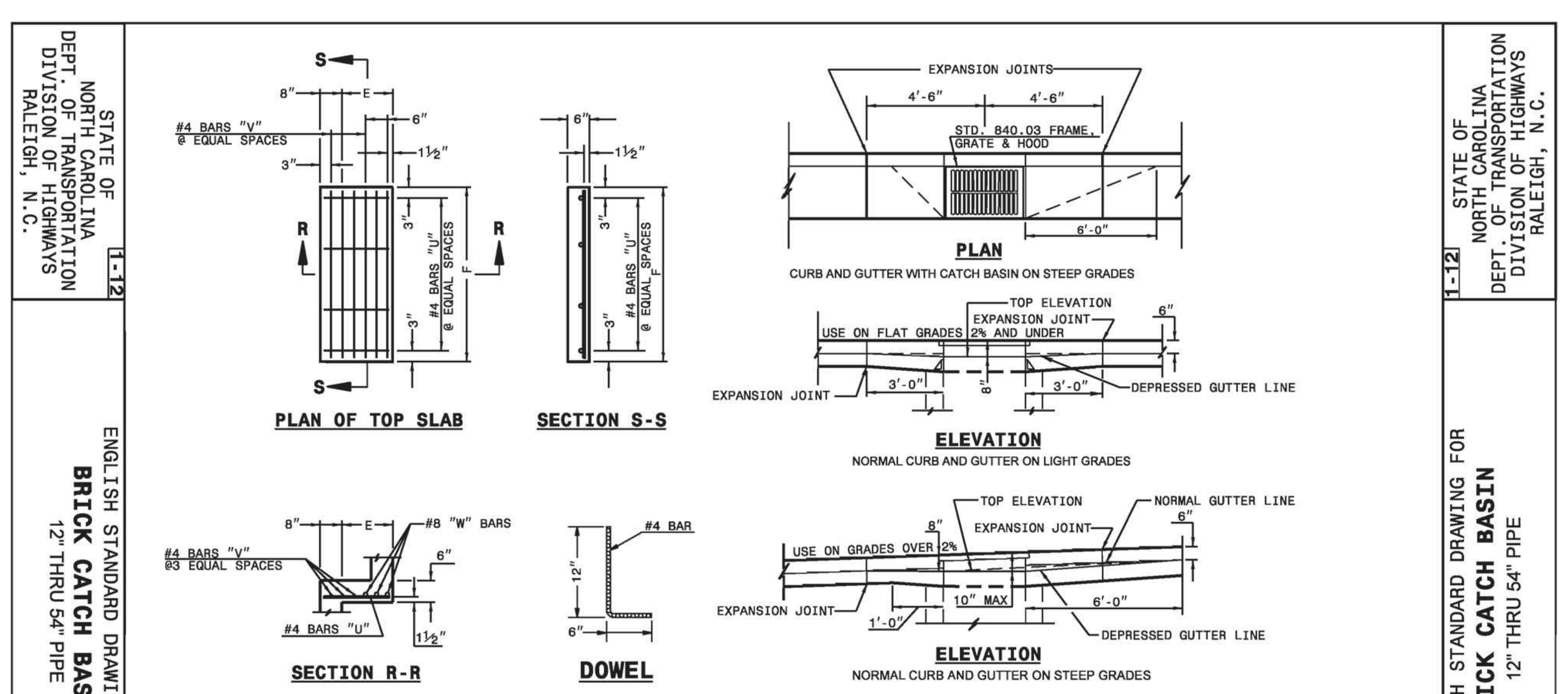








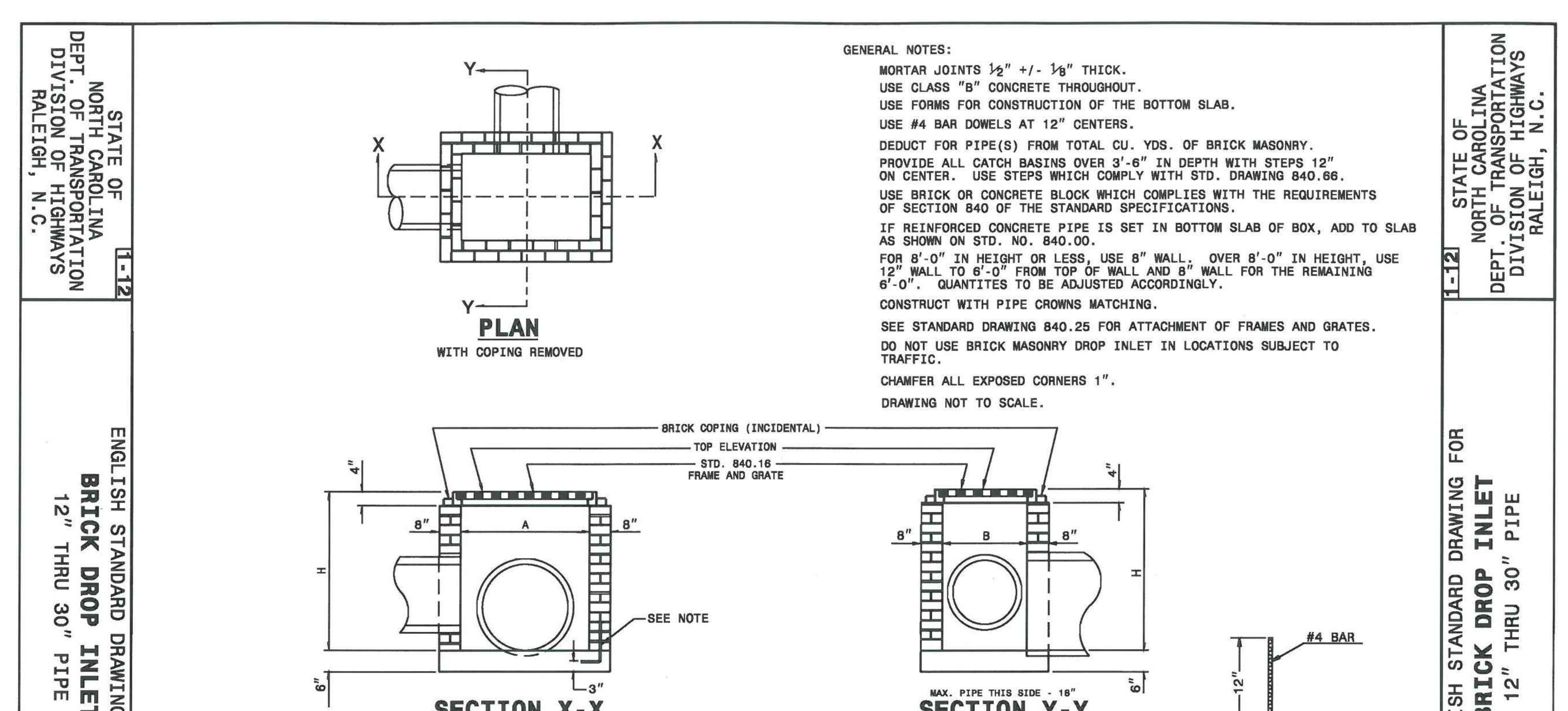




MINIMUM DIMENSIONS AND QUANTITIES FOR BRICK CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER)*

PIPE D	SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	TOP SLAB E	TOP SLAB F	BARS-U NO.	BARS-U LENGTH	BARS-V NO.	BARS-V LENGTH	BARS-W NO.	BARS-W LENGTH	TOTAL LBS.	CU.YDS. CONC. IN BOX TOP SLAB	BOTTOM SLAB	TOTAL CONC.	BRICK MSNR. IN WALLS	TOTAL BRICK AND CONCRETE	DEDUCTIONS ONE PIPE C.M.	R.C.
12"	3'-0"	2'-2"	--	--	2'-9"	--	--	--	--	--	--	--	--	--	--	0.281	0.281	0.883	1.164	0.020	0.042
15"	3'-0"	2'-2"			3'-0"											0.281	0.281	0.963	1.244	0.031	0.047
18"	3'-0"	2'-2"			3'-3"											0.281	0.281	1.043	1.324	0.044	0.065
24"	3'-0"	2'-2"			3'-9"											0.281	0.281	1.204	1.485	0.078	0.121
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-4"	4	1'-6"	3	4'-1"	3	4'-1"	45	0.147	0.374	0.521	1.606	2.217	0.122	0.184
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-4"	4	2'-0"	4	4'-1"	3	4'-1"	49	0.187	0.415	0.602	1.914	2.516	0.176	0.261
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-6"	4	1'-9"	3	3'-3"	3	3'-3"	38	0.135	0.373	0.508	2.152	2.660	0.240	0.371
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-6"	4	2'-6"	4	3'-3"	3	3'-3"	41	0.173	0.410	0.583	2.415	2.998	0.313	0.477
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-6"	4	3'-0"	6	3'-3"	3	3'-3"	47	0.211	0.448	0.659	2.806	3.465	0.396	0.595

* RISER HAS .321 CUBIC YARDS OF BRICK MASONRY PER FOOT HEIGHT



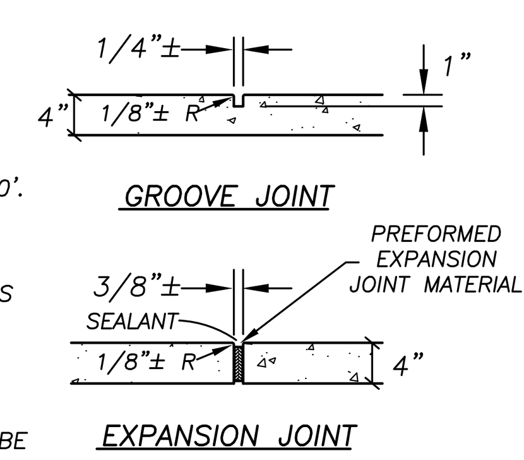
DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)

PIPE D	SPAN A	WIDTH B	MIN. HEIGHT H	CUBIC YARDS CONCRETE BOTTOM SLAB	CUBIC YARDS BRICK MASONRY WALL PER FOOT HT.	TOTAL BRICK MASONRY FOR MIN. HEIGHT, H	DEDUCTIONS FOR ONE PIPE C.S.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.268	0.313	0.522	0.020	0.032
15"	/	/	2'-3"	0.268	0.313	0.600	0.031	0.047
18"			2'-6"	0.268	0.313	0.678	0.044	0.065
24"			3'-0"	0.268	0.313	0.835	0.078	0.113
30"	3'-0"	2'-0"	3'-6"	0.268	0.313	0.991	0.122	0.170

JOINT NOTES:

1. PROVIDE EXPANSION JOINTS AT ALL LOCATIONS WHICH ABUTS EXISTING CONCRETE OR STRUCTURES.
2. MAXIMUM TRANSVERSE EXPANSION JOINT SPACING SHALL BE 40'.
3. TRANSVERSE GROOVE JOINT SPACING SHALL GENERALLY BE 5'. ENGINEER MAY ALLOW VARIANCES WHERE SIDEWALK TERMINATES AT DRIVEWAYS, STRUCTURES, ETC.
4. PROVIDE TRANSVERSE GROOVE JOINTS AT ALL ANGLE LOCATIONS OF SIDEWALK.
5. PROVIDE TRANSVERSE GROOVE JOINTS AT ALL DRIVEWAYS, THICKENED TO 6".

NOTE:
ALL CONCRETE TO BE CLASS A 3000 PSI



JOINT DETAILS

SIDEWALK DETAILS

NOT TO SCALE

DocuSigned by: Mark Reich
58637F049ADB4D7

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14	CONSTRUCTION DETAILS	JOB NO. 13069
DRAWN BY: WDF		DWG NAME: 13069DETAILS.DWG
CHECKED BY: MDR		SHEET NO. 12.1

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | 1-12

ENGLISH STANDARD DRAWING FOR
TRAFFIC BEARING JUNCTION BOX
FOR USE WITH PIPES 42" AND UNDER

SHEET 2 OF 2
840.34

GENERAL NOTES:

USE STANDARD OR JUMBO BRICK FOR WALL CONSTRUCTION. SOLID CONCRETE BRICK OR BLOCK ARE OPTIONAL WALL CONSTRUCTION MATERIAL.

PRECAST UNITS MADE OF CLASS "AA" CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONTRUCTION. SUBMIT DESIGN OF PRECAST UNITS FOR APPROVAL PRIOR TO CONSTRUCTION.

INCLUDE ALL ADJUSTMENTS TO WALLS, SLABS OR REINFORCING MATERIAL IN THE UNIT PRICE BID FOR EACH UNIT.

INSTALL OPTIONAL MANHOLE IN POSITION AS DIRECTED BY THE ENGINEER. CUT OR BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE. ENCLOSE THE OPENING WITH 8 "A" BARS TIED TO TO THE REBAR MAT AND SET SO A MINIMUM OF 3" CONCRETE COVER IS ATTAINED. REFERENCE STD. NO. 840.54 FOR MANHOLE INFORMATION.

PROVIDE JUNCTION BOXES WITH MANHOLES OVER 3'-6" IN DEPTH WITH STEPS PLACED ON 12" CENTERS. REFERENCE STD. NO. 840.66.

SPACE DOWEL "C" BARS AT A MAXIMUM OF 12" CENTERS.

MAXIMUM DEPTH OF THIS UNIT AS SHOWN IS 12'.

CONSTRUCT THE JUNCTION BOX IN ACCORDANCE WITH SECTIONS 830, 832, 834 AND 840 OF THE STANDARD SPECIFICATIONS.

BILL OF MATERIAL

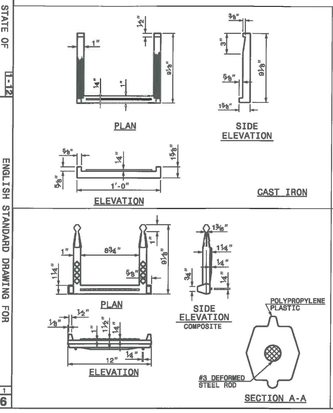
BAR	QTY.	SIZE	LNGTH	WEIGHT
A	8	#5	1'-5"	9.7
B	14	#5	5'-8"	50.3
C	26	#4	1'-8"	28.1
Y	14	#6	36'-11½"	101.5
STEEL TOTAL WEIGHT				217.6
CU. YDS. CLASS "AA" CONC.				2.8
CU. YDS. BRICK/FT. HT. (8")				0.53
CU. YDS. BRICK/FT. HT. (12")				0.84

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | 1-12

ENGLISH STANDARD DRAWING FOR
DRAINAGE STRUCTURE STEPS

SHEET 1 OF 1
840.66

NOTES:
INSTALL ALL STEPS PROTRUDING 4" FROM INSIDE FACE OF STRUCTURE WALL.
STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SUCH STEPS.

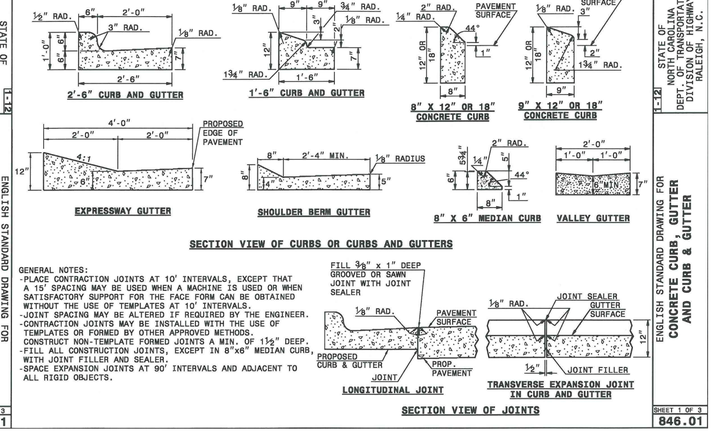


NOTE:
DO NOT USE IN SANITARY SEWER MANHOLES.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | 1-12

ENGLISH STANDARD DRAWING FOR
CONCRETE CURB, GUTTER AND CURB & GUTTER

SHEET 1 OF 3
846.01



SECTION VIEW OF CURBS OR CURBS AND GUTTERS

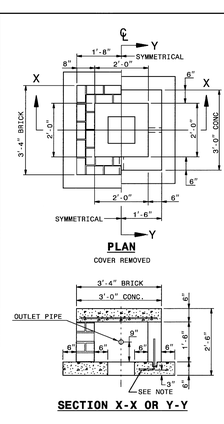
GENERAL NOTES:
- PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
- JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
- CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1½" DEEP.
- FILL ALL CONSTRUCTION JOINTS, EXCEPT IN 8"x6" MEDIAN CURB, WITH JOINT FILLER AND SEALER.
- SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.

SECTION VIEW OF JOINTS

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | 1-12

ENGLISH STANDARD DRAWING FOR
SPRING BOX
CONCRETE OR BRICK

SHEET 1 OF 1
840.41



GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION OF CONCRETE BOX - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
REINFORCING STEEL (A-BARS) TO BE #3 STRAIGHT BARS, 12 BARS REQUIRED 2'-9" LONG FOR CONCRETE BOX AND 3'-1" LONG FOR BRICK BOX.
DIMENSIONS OF BOX MAY BE CHANGED BY THE ENGINEER.
MORTAR JOINTS ½" x ⅛" THICK.
CONCAVE TOOL ALL EXPOSED JOINTS.
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
JUMBO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS MAY BE USED IN LIEU OF CLAY BRICK.

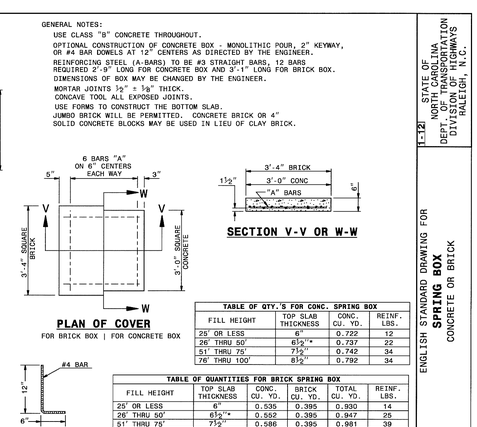


TABLE OF QTY.'S FOR CONC. SPRING BOX

FILL HEIGHT	TOP SLAB THICKNESS	CONC. CU. YD.	REINF. LBS.
25" OR LESS	6"	0.722	12
26" THRU 50"	6½" *	0.737	22
51" THRU 75"	7½"	0.742	34
76" THRU 100"	8½"	0.792	34

TABLE OF QUANTITIES FOR BRICK SPRING BOX

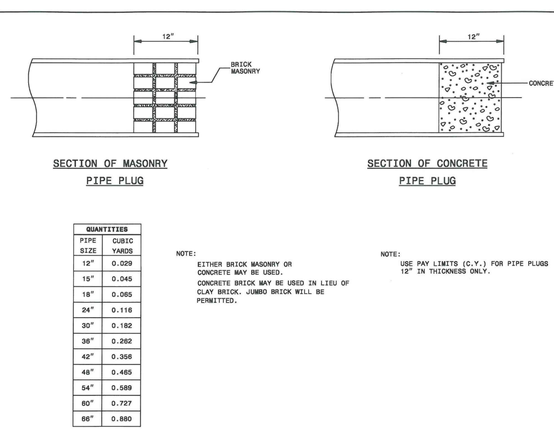
FILL HEIGHT	TOP SLAB THICKNESS	CONC. CU. YD.	BRICK CU. YD.	TOTAL CU. YD.	REINF. LBS.
25" OR LESS	6"	0.539	0.395	0.930	14
26" THRU 50"	6½" *	0.552	0.395	0.947	25
51" THRU 75"	7½"	0.586	0.395	0.981	39
76" THRU 100"	8½"	0.620	0.395	1.015	39

* USE THIS TOP SLAB FOR LIVE LOAD UP TO 2' OF FILL.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | 1-12

ENGLISH STANDARD DRAWING FOR
CONCRETE AND BRICK PIPE PLUG

SHEET 1 OF 1
840.71



QUANTITIES	
PIPE SIZE	CUBIC YARDS
12"	0.029
15"	0.045
18"	0.065
24"	0.116
30"	0.182
36"	0.262
42"	0.356
48"	0.465
54"	0.589
60"	0.727
66"	0.880

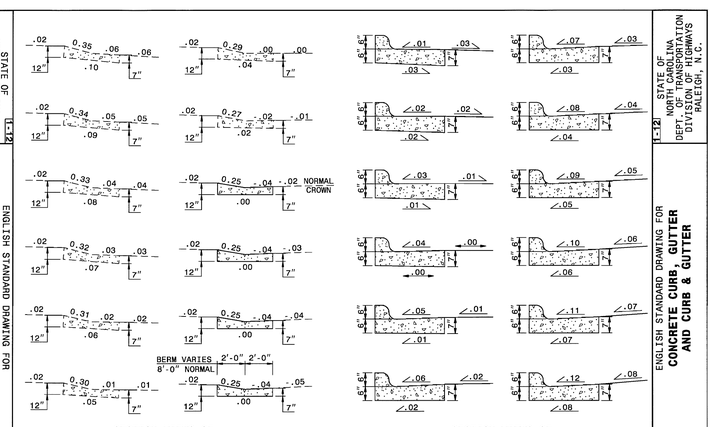
NOTE:
EITHER BRICK MASONRY OR CONCRETE MAY BE USED.
CONCRETE BRICK MAY BE USED IN LIEU OF CLAY BRICK. JUMBO BRICK WILL BE PERMITTED.

NOTE:
USE PAY LIMITS (C.Y.) FOR PIPE PLUGS 12" IN THICKNESS ONLY.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | 1-12

ENGLISH STANDARD DRAWING FOR
CONCRETE CURB, GUTTER AND CURB & GUTTER

SHEET 2 OF 3
846.01

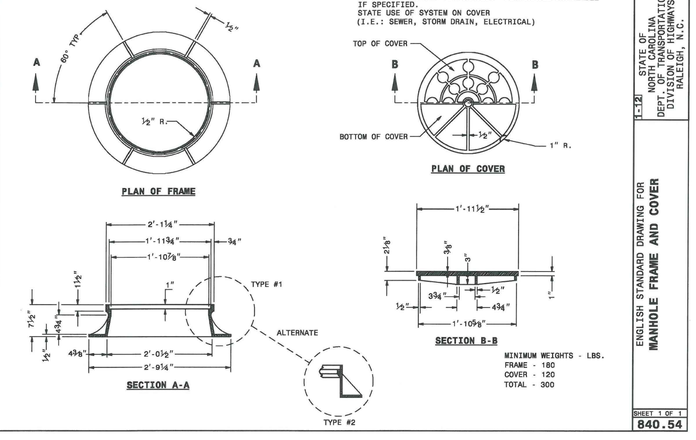


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | 1-12

ENGLISH STANDARD DRAWING FOR
MANHOLE FRAME AND COVER

SHEET 1 OF 1
840.54

SOLID COVER SHOWN PERFORATED. PERFORATED AVAILABLE IF SPECIFIED.
STATE USE OF SYSTEM ON COVER (I.E.: SEWER, STORM DRAIN, ELECTRICAL)

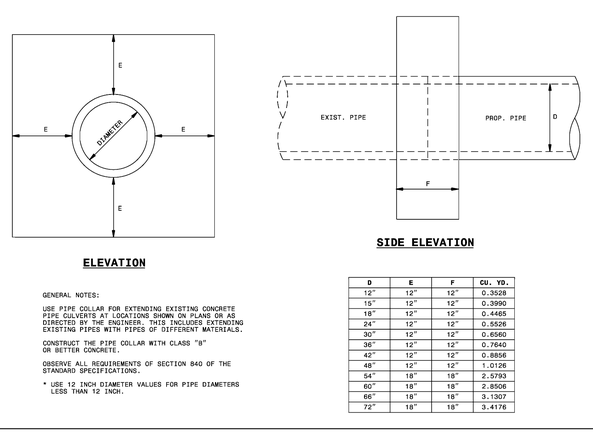


MINIMUM WEIGHTS - LBS.
FRAME - 180
COVER - 120
TOTAL - 300

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | 1-12

ENGLISH STANDARD DRAWING FOR
PIPE COLLAR

SHEET 1 OF 1
840.72



GENERAL NOTES:

USE PIPE COLLAR FOR EXTENDING EXISTING CONCRETE PIPE CULVERTS AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER. THIS INCLUDES EXTENDING EXISTING PIPES WITH PIPES OF DIFFERENT MATERIALS.

CONSTRUCT THE PIPE COLLAR WITH CLASS "B" OR BETTER CONCRETE.

OBSERVE ALL REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

* USE 12 INCH DIAMETER VALUES FOR PIPE DIAMETERS LESS THAN 12 INCH.

D	E	F	CU. YD.
12"	12"	12"	0.3528
15"	12"	12"	0.3990
18"	12"	12"	0.4465
24"	12"	12"	0.5526
30"	12"	12"	0.6560
36"	12"	12"	0.7640
42"	12"	12"	0.8856
48"	12"	12"	1.0126
54"	18"	18"	2.5793
60"	18"	18"	2.8506
66"	18"	18"	3.1307
72"	18"	18"	3.4176

DocuSigned by: Mark Reich
58637F049AD84D7...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

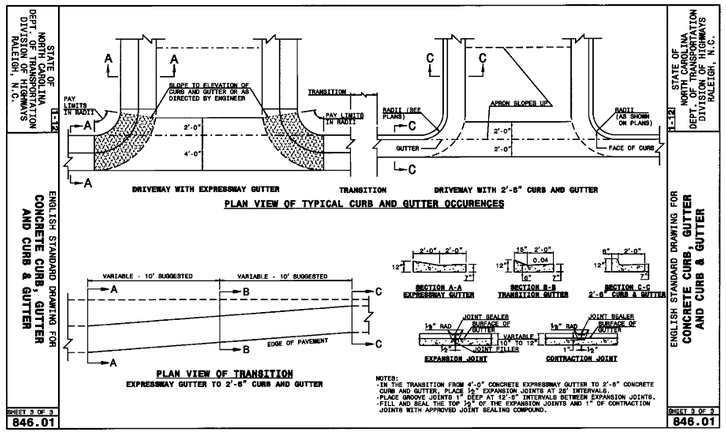
YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

JOB NO. 13069
DWG NAME: 13069DETAILS.DWG
SHEET NO. 12.2

CONSTRUCTION DETAILS



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CONCRETE CURB, GUTTER AND CURB & GUTTER**

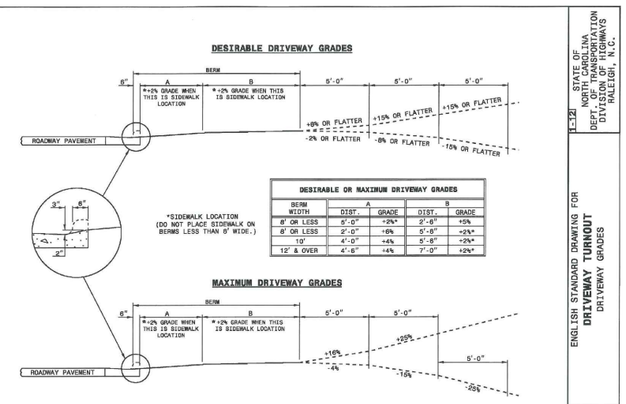
SHEET 3 OF 3 **846.01**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CONCRETE CURB, GUTTER AND CURB & GUTTER**

SHEET 3 OF 3 **846.01**



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **DRIVEWAY TURNOUT** DRIVEWAY GRADES

SHEET 2 OF 2 **848.03**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **DRIVEWAY TURNOUT** DRIVEWAY GRADES

SHEET 2 OF 2 **848.03**

NOTES:

1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4'x4' CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4' MINIMUM.
5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
6. TERMINATE PARKING A MINIMUM OF 20' BACK OF A PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4' WIDE.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4'x4' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5'x5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6' WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGHT THE ISLAND.
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5'X5' LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A ½" EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
18. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT QUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR THE DETAILS OR FOR A SPECIAL DESIGN.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CURB RAMPS** NOTES

SHEET 3 OF 3 **848.05**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CURB RAMPS** NOTES

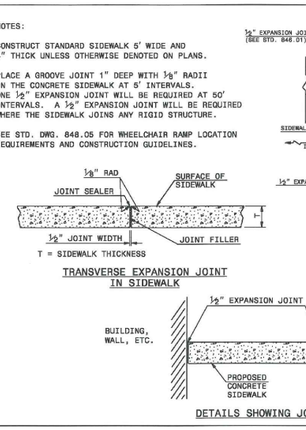
SHEET 3 OF 3 **848.05**

NOTES:

CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH ⅛" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE ½" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A ½" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.05 FOR WHEELCHAIR RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CONCRETE SIDEWALK**

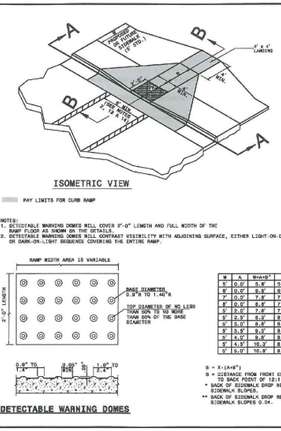
SHEET 1 OF 1 **848.01**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CONCRETE SIDEWALK**

SHEET 1 OF 1 **848.01**



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CURB RAMP** PROPOSED CURB AND GUTTER

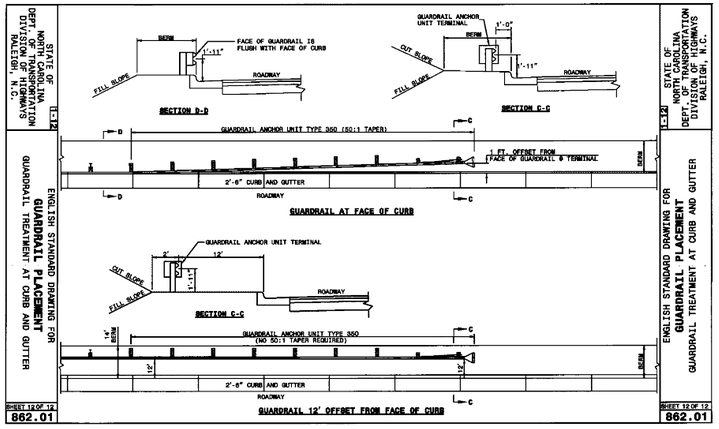
SHEET 1 OF 3 **848.05**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CURB RAMP** PROPOSED CURB AND GUTTER

SHEET 1 OF 3 **848.05**



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **GUARDRAIL PLACEMENT** GUARDRAIL TREATMENT AT CURB AND GUTTER

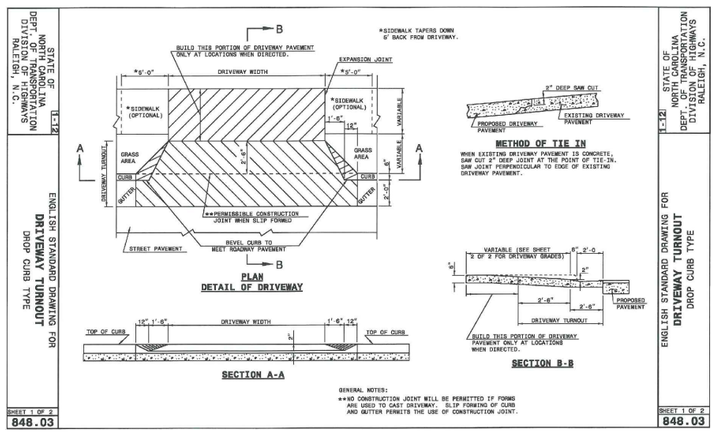
SHEET 12 OF 12 **862.01**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **GUARDRAIL PLACEMENT** GUARDRAIL TREATMENT AT CURB AND GUTTER

SHEET 12 OF 12 **862.01**



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **DRIVEWAY TURNOUT** DROP CURB TYPE

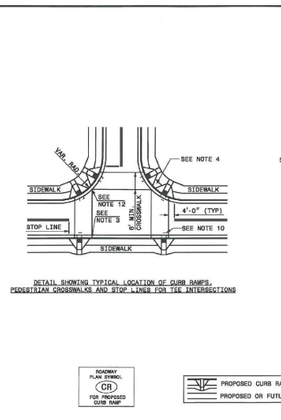
SHEET 1 OF 2 **848.03**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **DRIVEWAY TURNOUT** DROP CURB TYPE

SHEET 1 OF 2 **848.03**



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CURB RAMP** PROPOSED CURB AND GUTTER

SHEET 2 OF 3 **848.05**

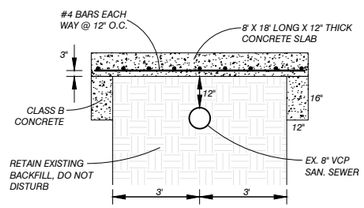
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CURB RAMP** PROPOSED CURB AND GUTTER

SHEET 2 OF 3 **848.05**

NOTE: CRADLE MAY BE CAST IN PLACE OR PRECAST. PROVIDE SHOP DRAWINGS IF PRECAST OPTION IS USED.



SANITARY SEWER CRADLE

NO SCALE

DocuSigned by:
Mark Reich
58637F049ADB4D7...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

REV. 7/31/15 PER NCDOT COMMENTS
REV. 3/12/15 ADDED SEWER CRADLE DETAIL

NCDOT PROJECT NO. EB-3314 E

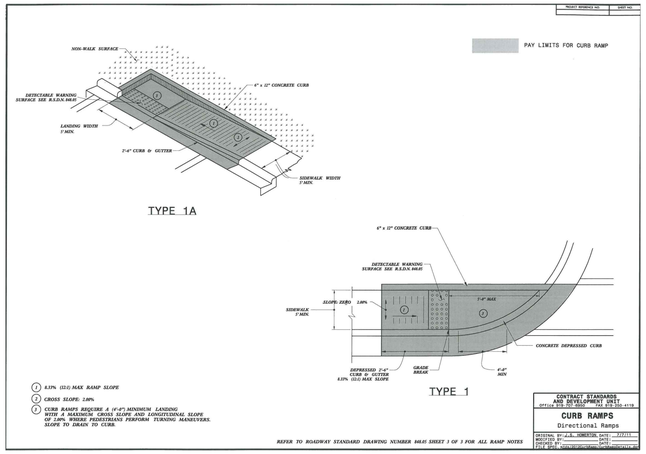
PROPOSED SIDEWALK IMPROVEMENTS FOR

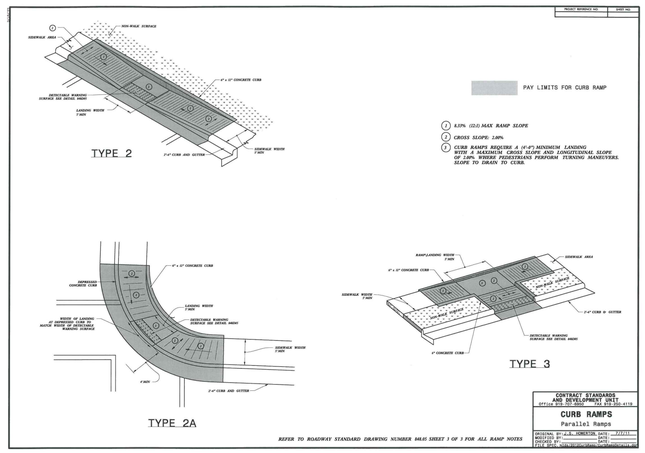
TOWN OF YANCEYVILLE

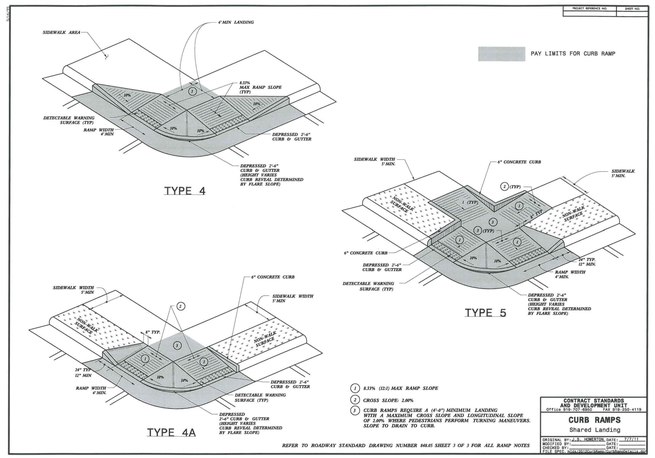
YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

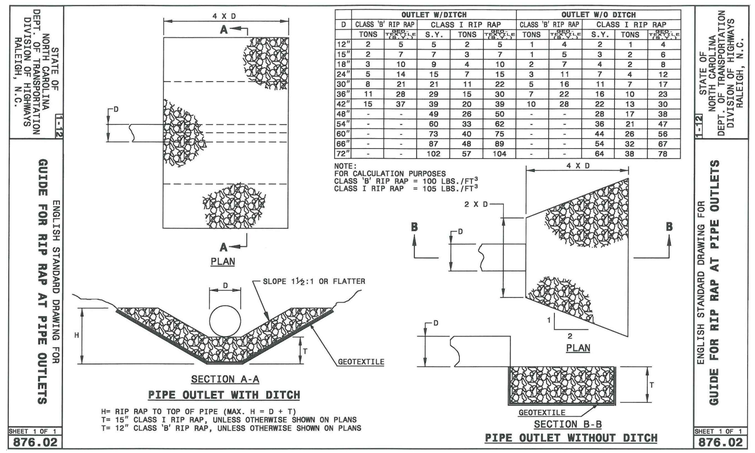
alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

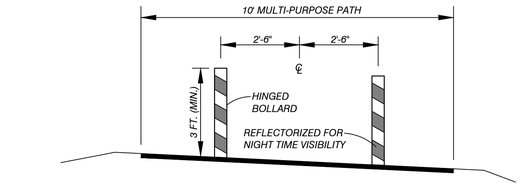
DATE: 8/15/14	CONSTRUCTION DETAILS	JOB NO. 13069
DRAWN BY: WDF		DWG NAME: 13069DETAILS.DWG
CHECKED BY: MDR		SHEET NO. 12.3







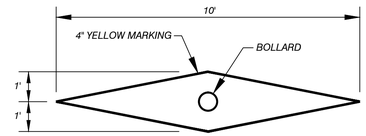




TYPICAL METAL BOLLARD PLACEMENT

NO SCALE

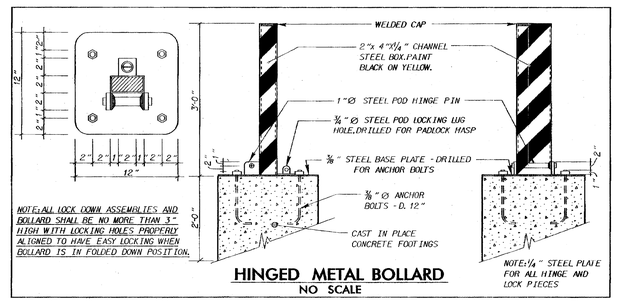
FOR MORE EXPLANATION, SEE "RESTRICTION OF MOTOR VEHICLE TRAFFIC", SECTION 7, PAGE 50 OF NORTH CAROLINA BICYCLE FACILITIES PLANNING AND DESIGN GUIDELINES.



BOLLARD MARKING DETAIL FOR HINGED BOLLARD

NO SCALE

1. ALL BOLLARD POSTS TO BE REFLECTORIZED.
2. BOLLARD PLACEMENT OFFSET FROM INTERSECTIONS IS A MINIMUM OF 5'.
3. BOLLARDS AND SIGNS TO BE INSTALLED BY THE CONTRACTOR.
4. ALL METAL TO BE HOT DIPPED GALVANIZED STEEL.

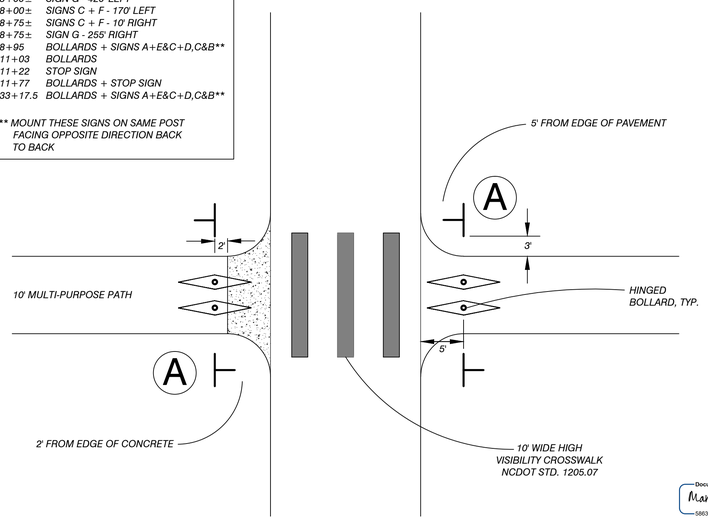


HINGED METAL BOLLARD

NO SCALE

STA. 8+00±	SIGN G - 420' LEFT
STA. 8+00±	SIGNS C + F - 170' LEFT
STA. 8+75±	SIGNS C + F - 10' RIGHT
STA. 8+75±	SIGN G - 255' RIGHT
STA. 8+95	BOLLARDS + SIGNS A+E&C+D,C&B**
STA. 11+03	BOLLARDS
STA. 11+22	STOP SIGN
STA. 11+77	BOLLARDS + STOP SIGN
STA. 33+17.5	BOLLARDS + SIGNS A+E&C+D,C&B**

** MOUNT THESE SIGNS ON SAME POST FACING OPPOSITE DIRECTION BACK TO BACK



PAVEMENT MARKING PLAN

NO SCALE

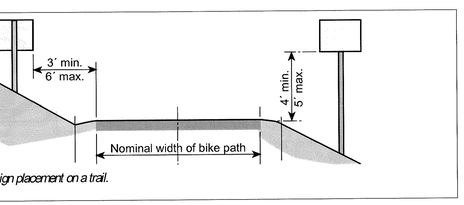


Figure 9-1: Bicycle sign placement on a trail.

A
QUANTITY REQUIRED: 4
STOP
18" X 18"
R1-1

B
QUANTITY REQUIRED: 2
NO MOTOR VEHICLES
24" X 24"
R5-3

C
QUANTITY REQUIRED: 6
BIKE ROUTE
24" X 18"
D11-1

D
QUANTITY REQUIRED: 2
BEGIN
24" X 6"
M4-11

E
QUANTITY REQUIRED: 2
END
24" X 6"
M4-12

F
QUANTITY REQUIRED: 2
36" X 36"
M11-1A

G
QUANTITY REQUIRED: 2
12" X 9"
M7-5

SIGNS
SUMMARY OF QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
1672	901	CONTRACTOR FURNISHED TYPE "E" SIGNS	58.5	SF
1679	903	3 LB. STEEL U-CHANNEL POSTS	130	LF
1687	904	TYPE "E" SIGNS, ERECTION	20	EA

ALL SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER. BACKGROUND SHALL BE TYPE III REFLECTIVE SHEETING UNLESS OTHERWISE INDICATED.

SEE NORTH CAROLINA BICYCLE FACILITIES PLANNING AND DESIGN GUIDELINES, APPLICABLE ROADWAY STANDARD DRAWINGS, AND MUTCD FOR FURTHER DETAILS AND INFORMATION.

ROADWAY STANDARD DRAWINGS APPLICABLE TO THESE SIGNING PLANS:

STD. NO.	TITLE
901.50	ARROWS AND SHILDS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE "D", "E" AND "F" SIGNS ON "U" CHANNEL

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DocuSigned by: Mark Reich 58637F048AD84D7...

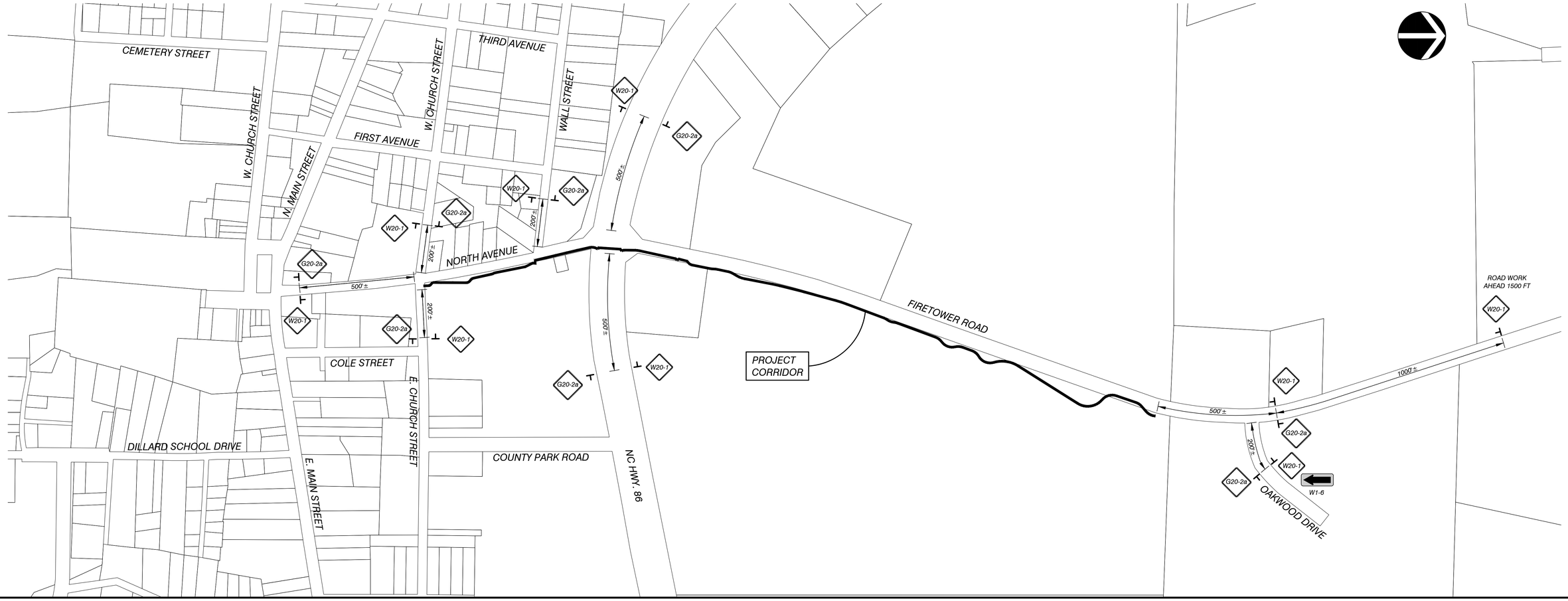
NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

REV. 9/24/15 PER NCDOT COMMENTS
REV. 7/31/15 PER NCDOT COMMENTS
REV. 2/11/15 PER NCDOT COMMENTS

DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

CONSTRUCTION DETAILS

JOB NO. 13069
DWG NAME: 13069DETAILS.DWG
SHEET NO. 12.4



OVERALL MAP

SCALE: 1" = 200'

GENERAL TRAFFIC CONTROL NOTES

1. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH ALL NCDOT AND MUTCD SPECIFICATIONS AND REQUIREMENTS.
2. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.
3. CONTRACTOR SHALL PROVIDE STATIONARY WORK ZONE SIGNS (ROAD CONSTRUCTION AHEAD AND END CONSTRUCTION) AS SHOWN ON TRAFFIC CONTROL PLAN OR AS DIRECTED BY ENGINEER.
4. INSTALL STATIONARY ADVANCE WORK ZONE WARNING SIGNS A MINIMUM OF 3 DAYS PRIOR TO BEGINNING WORK.
5. FLAGGERS SHALL BE CERTIFIED IN WORK ZONE TRAFFIC CONTROL OPERATIONS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

1. REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
2. WHEN WORKING WITHIN 10 FEET OF EDGE OF PAVEMENT, CONTRACTOR WILL BE ALLOWED TO CLOSE ADJACENT TRAVEL LANE, PROVIDED TRAFFIC CONTROL IS MAINTAINED IN ACCORDANCE WITH EITHER METHOD A, B OR C AS FOLLOWS:
   A. SKINNY DRUMS ARE USED TO PROVIDE 2 TRAVEL LANES, ONE IN EACH DIRECTION WITH A MINIMUM LANE WIDTH OF 10' EACH AND 10 FEET OF CLEARANCE BETWEEN TRAVEL LANE AND WORK ZONE.
   B. PROVIDE FLAGGERS AND SHIFT TRAFFIC TO OPPOSITE LANE PER NCDOT STANDARDS.
   C. CONTRACTOR PROVIDES WATER FILLED OR CONCRETE BARRIERS IMMEDIATELY ADJACENT TO THE WORK ZONE AREA AS DIRECTED BY THE ENGINEER.

   CONTRACTOR SHALL PROVIDE PERSONNEL AND EQUIPMENT FOR EITHER METHOD A, B OR C IN ACCORDANCE WITH NCDOT STANDARDS, INCLUDING ALL PORTABLE SIGNS.
3. PROVIDE PORTABLE TRAFFIC CONTROL SIGNS AND CHANNELIZING DEVICES TO SHIFT TRAFFIC AS SHOWN ON STANDARD DRAWING 1101.02 OR AS DIRECTED BY THE ENGINEER.
4. SPACE CHANNELIZING DEVICES IN WORK AREA AT 40 FT MAX ON CENTER IN TANGENT SECTIONS AND 10 FT MAX ON CENTER IN RADII SECTIONS. CHANNELIZING DEVICES SHALL BE AT LEAST 3 FT OFF EDGE OF AN OPEN TRAVELWAY WHEN LANE CLOSURES ARE NOT IN EFFECT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

1. BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF THE EXISTING PAVEMENT WHERE THE DROP OFF EXCEEDS 2 INCHES. BACKFILL MATERIAL SHALL BE COMPACTED AND APPROVED BY THE ENGINEER AS SUITABLE MATERIAL FOR THE INTENDED PURPOSE. BACKFILL MATERIAL SHALL BE PROVIDED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER. WHEN DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL PROVIDE ABC STONE BASE AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR INCIDENTAL STONE.

┤ DENOTES STATIONARY TRAFFIC CONTROL SIGN

SIGN SUMMARY

STATIONARY SIGNS

TYPE	DESCRIPTION	SIZE	QUANTITY
W20-1	ROAD WORK AHEAD	48" X 48"	8
G20-2a	END ROAD WORK	48" X 24"	8
W20-1	ROAD WORK AHEAD 1500 FT	48" X 48"	1
W1-6	ONE-DIRECTION LARGE ARROW	48" X 24"	1

CONTRACTOR SHALL PROVIDE ALL OTHER REQUIRED SIGNAGE IN ACCORDANCE WITH NCDOT REQUIREMENTS TO TEMPORARILY CLOSE TRAVEL LANES ADJACENT TO WORK ZONE.

TRAFFIC CONTROL WORK RESTRICTIONS

LANE CLOSURES WILL NOT BE ALLOWED BETWEEN 7:00 AM - 9:00 AM AND FROM 4:00 PM - 7:00 PM, MONDAY THRU FRIDAY, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

DocuSigned by: Mark Reich 58637F049ADB4D5...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

REV. 8/24/15 PER NCDOT COMMENTS

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

TRAFFIC CONTROL PLAN

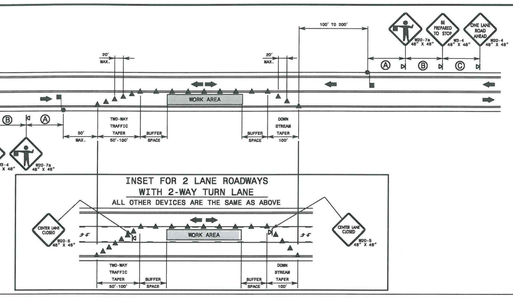
JOB NO. 13069
DWG NAME: 13069TRAFFICCONTROL.DWG
SHEET NO. 13.1

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

SHEET 1 OF 15
1101.02



GENERAL NOTES FOR FLAGGER OPERATIONS

1- REFER TO STD. 1101.11 SHEET 4 FOR SIGN SPACING.
2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
3- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
4- PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
5- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO STD. 1101.11 SHEET 2).
6- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 6 MINUTES AT A TIME.
7- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO ROADWAY STANDARD DRAWING 1180.01 FOR SKINNY DRUM REQUIREMENTS.
8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7G) PLACED APPROXIMATELY 500 FT. IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND RECOMMEND THE USE OF LAW ENFORCEMENT.
9- REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
10- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

GENERAL NOTES FOR PILOT CAR OPERATIONS

1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
2- IF ROADWAY WIDTH IS LESS THAN 22 FEET (TOP TO EDGE), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DISCRETION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.
3- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
4- MOUNT SIGN SDD-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
5- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
6- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

LEGEND
- FLAGGER
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
BUFFER SPACE & SIGHT DISTANCE

SHEET 2 OF 4
1101.11

DESIGN SPEED (MPH)	MINIMUM SIGHT DISTANCE		MINIMUM LONGITUDINAL BUFFER SPACE (FEET)
	STOPPING SIGHT DISTANCE (FEET)	PASSING SIGHT DISTANCE (FEET)	
30	200	1090	85
35	250	1280	120
40	305	1470	155
45	360	1625	195
50	425	1835	240
55	495	1985	290
60	570	2135	345
65	645	2285	405
70	730	2480	470
75	820	2580	540
80	910	2680	615

GENERAL NOTES

1- TABLES ARE BASED ON THE AASHTO GREEN BOOK "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". MINIMUM SIGHT DISTANCE VALUES ARE FOR PASSENGER CAR VEHICLES ON WET AND LEVEL ROADWAYS. CONSULT THE AASHTO GREEN BOOK TO MAKE FINAL DETERMINATION OF STOPPING SIGHT DISTANCE REQUIREMENTS.

2- BUFFER SPACE TABLE IS BASED ON THE BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS.

3- USE OF STOPPING SIGHT DISTANCE IN TRAFFIC CONTROL PLAN APPLICATIONS INCLUDES PROVIDING SIGHT DISTANCE FOR TRAFFIC APPROACHING A LANE CLOSURE. PROVIDE 2-LANE, 2-WAY ROADWAYS STOPPING SIGHT DISTANCE TO THE FLAGGER. FOR LANE CLOSURES ON MULTILANE ROADWAYS PROVIDE STOPPING SIGHT DISTANCE TO THE BEGINNING OF THE LANE CLOSURE MERGE TAPER, OR FLASHING ARROW BOARD. EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED.

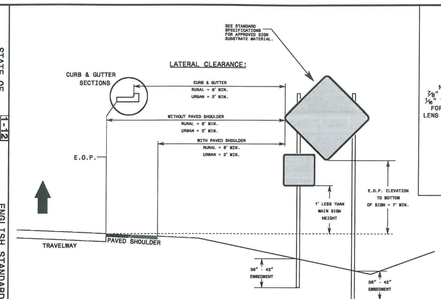
4- USE OF MINIMUM PASSING SIGHT DISTANCE TABLE IN TRAFFIC CONTROL PLAN APPLICATIONS INCLUDES PROVIDING SIGHT DISTANCE REQUIREMENTS FOR PLACEMENT OF PAVEMENT MARKING PASSING/NO-PASSING ZONES FOR 2-LANE, 2-WAY ROADWAYS.

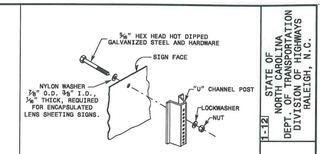
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
STATIONARY WORK ZONE SIGNS
MOUNTING HEIGHT & LATERAL CLEARANCE

SHEET 1 OF 3
1110.01





ASSEMBLY DETAIL

GENERAL NOTES

1- DIMENSIONS SHOWN ARE MINIMUM VALUES. WHEN SIGNS ARE MOUNTED BEHIND TRAFFIC CONTROL DEVICES SUCH AS DRUMS, BARRIER, OR OTHER OBJECTS THAT DETRACT FROM THEIR VISIBILITY, MOUNT THE SIGNS AT AN APPROPRIATE HEIGHT SUCH THAT THEY ARE CLEARLY VISIBLE TO APPROACHING TRAFFIC.

2- MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. FOLLOW MANUFACTURER'S RECOMMENDATIONS. THESE SYSTEMS SHALL BE NCHRP 350 COMPLIANT AND NCDOT APPROVED.

3- SEE STANDARD SPECIFICATION 1089-1 FOR WORK ZONE SIGNS.

4- SEE STANDARD SPECIFICATION 1089-2 FOR WORK ZONE SIGN SUPPORTS.

5- SEE ROADWAY STANDARD DRAWING 903.20 FOR WOOD POSTS.

6- SEE STANDARD SPECIFICATION 903-1 FOR WOOD SUPPORTS.

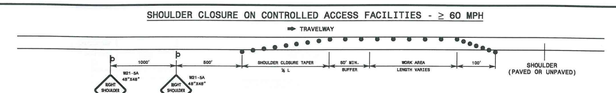
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

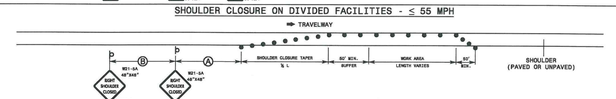
ENGLISH STANDARD DRAWING FOR
TEMPORARY SHOULDER CLOSURES

SHEET 1 OF 1
1101.04

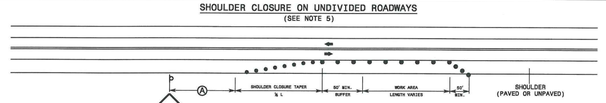
SHOULDER CLOSURE ON CONTROLLED ACCESS FACILITIES - ≥ 60 MPH



SHOULDER CLOSURE ON DIVIDED FACILITIES - ≤ 55 MPH



SHOULDER CLOSURE ON UNDIVIDED ROADWAYS
(SEE NOTE 5)



GENERAL NOTES

1- PLACE SHOULDER CLOSURE SIGNS ON THE SAME SIDE AS THE SHOULDER THAT IS CLOSED.
2- PLACE DRUMS IN THE SHOULDER TAPER AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MAXIMUM SPACING OF DRUMS ALONG THE WORK AREA IS EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
3- USE STATIONARY SIGNS FOR LONG TERM OPERATIONS (LONGER THAN 3 DAYS).
4- REFER TO STD. 1101.11 FOR "L" DISTANCE AND SIGN SPACING.
5- THE TWO-LANE, TWO-WAY DRAWING MAY BE APPLIED TO UNDIVIDED, MULTI-LANE FACILITIES.

LEGEND
- DRUM
- STATIONARY OR PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

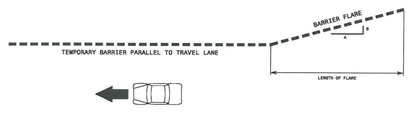
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
TEMPORARY BARRIER FLARE RATES

SHEET 3 OF 4
1101.11

TEMPORARY BARRIER FLARE RATES		
POSTED SPEED LIMIT (MPH)	ANCHORED (AIR)	UNANCHORED (AIR)
≤ 30	8 : 1	7 : 1
35	9 : 1	8 : 1
40	10 : 1	8 : 1
45	12 : 1	10 : 1
50	14 : 1	11 : 1
55	16 : 1	12 : 1
60	18 : 1	14 : 1
65	19 : 1	15 : 1
70	20 : 1	16 : 1



GENERAL NOTES

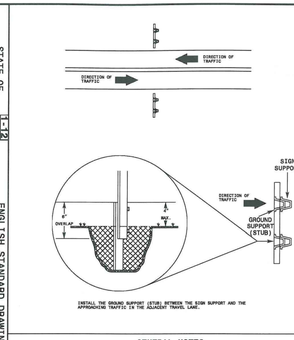
1- REFER TO 2002 ROADSIDE DESIGN GUIDE.
2- A BARRIER IS CONSIDERED FLARED WHEN IT IS NOT PARALLEL TO THE EDGE OF THE TRAVELWAY.
3- THE PRIMARY USE OF BARRIERS ARE FOR WORK AREA PROTECTION. WHEN SERVING THE ADDITIONAL FUNCTION OF A CHANNELIZING DEVICE, SUCH AS WHEN SHIFTING TRAFFIC, BARRIER TAPERS SHALL MEET STANDARD CHANNELIZING TAPER LENGTHS AS SHOWN ON STD. 1101.11 SHEET 1.

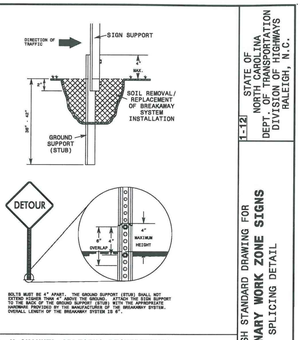
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
STATIONARY WORK ZONE SIGNS
SPLICING DETAIL

SHEET 2 OF 3
1110.01





GENERAL NOTES

1- ALL TRAFFIC CONTROL DEVICES, INCLUDING BREAKAWAY SYSTEMS FOR GROUND MOUNTED SIGN SUPPORTS, COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL BE APPROVED BY THE DEPARTMENT. ALL APPROVED TRAFFIC CONTROL DEVICES ARE ON THE DEPARTMENT'S WEB SITE AT: https://apps.dot.state.nc.us/vendor/approvedproducts.
2- INSTALL THE BREAKAWAY SYSTEM TO FUNCTION PROPERLY IN ACCORDANCE WITH THE DIRECTION OF TRAFFIC ADJACENT TO THE SIGN.
3- FOR PERFORATED SQUARE TUBING BREAKAWAY SYSTEMS, FOLLOW THE MANUFACTURER'S RECOMMENDATIONS FOR ANCHOR EMBEDMENT DEPTHS AND POST ATTACHMENT REQUIREMENTS.

3 LB. U-CHANNEL SPLICING REQUIREMENTS

1- WHEN SIGN IS REMOVED AT THE END OF PROJECT, REMOVE THE GROUND SUPPORT (STUB).
2- WHEN SPLICING A U-CHANNEL SUPPORT, INSTALL THE GROUND SUPPORT (STUB) APPROXIMATELY 36" TO 42" INTO THE GROUND WHILE LEAVING NO MORE THAN 4" ABOVE THE EXISTING GROUND ELEVATION. REMOVE ENOUGH SOIL FROM AROUND THE GROUND SUPPORT (STUB) TO PERMIT ACCESS TO THE HOLES FOR THE BREAKAWAY SYSTEM. ONCE THE BREAKAWAY SYSTEM IS TIGHTENED, REPLACE THE SOIL AND TAMP.
3- OVERALL LENGTH OF THE BREAKAWAY SYSTEM IS 6'. BOLTS MUST BE 4" APART. ATTACH THE SIGN SUPPORT TO THE BACK OF THE GROUND SUPPORT (STUB) WITH THE APPROPRIATE HARDWARE SUPPLIED BY THE MANUFACTURER OF THE BREAKAWAY SYSTEM.
4- INSTALL U-CHANNEL BREAKAWAY SYSTEMS SO THE GROUND SUPPORT (STUB) IS INSTALLED ON THE APPROACH SIDE OF TRAFFIC WHILE THE SIGN SUPPORT IS ATTACHED/SPLICED BEHIND THE GROUND SUPPORT (STUB).

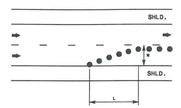
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
"L" DISTANCE AND CHANNELIZING DEVICE TAPER CRITERIA

SHEET 1 OF 4
1101.11

EXAMPLE OF "L" & "W" DESIGNATIONS



TAPER LENGTH CRITERIA FOR
CHANNELIZING DEVICES IN WORK ZONES

TYPES OF TAPERS	TAPER LENGTH
UPSTREAM TAPER	
MERGING TAPER	L MINIMUM
SHIFTING TAPER	½ L MINIMUM
SHOULDER TAPER	⅓ L MINIMUM
TWO-WAY TRAFFIC TAPER	50 - 100 FEET MAXIMUM
DOWNSTREAM TAPER	100 FEET MAXIMUM

QUICK REFERENCE - "L" DISTANCE TABLE MINIMUM LONGITUDINAL DISTANCE "L" (FEET) (ROUNDED VALUES)												
POSTED SPEED (MPH)	LATERAL WIDTH "W" (FEET)											
	1	2	3	4	5	6	7	8	9	10	11	12
20	10	15	20	30	35	40	50	55	60	70	75	80
25	15	25	35	45	55	65	75	85	95	105	115	125
30	15	30	45	60	75	90	105	120	135	150	165	180
35	25	45	65	85	105	125	145	165	185	205	225	245
40	30	55	80	110	135	160	190	215	240	270	295	320
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840

GENERAL NOTES

1- TABLE FOR "L" DISTANCE IS BASED ON CHANNELIZATION TAPER FORMULA FROM THE M.U.T.C.D. WHERE:

SPEED LIMIT	FORMULA
40 MPH OR LESS	$L_{MIN} = \frac{W \times S^2}{60}$
45 MPH OR GREATER	$L_{MIN} = W \times S$

L = MINIMUM TAPER LENGTH IN FEET (LONGITUDINAL DISTANCE)
W = WIDTH OF OFFSET IN FEET (LATERAL DISTANCE)
S = POSTED SPEED LIMIT, OR OFF-PEAK 85 PERCENTILE SPEED IN MPH PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

2- "L" DISTANCE IS FOR APPLICATION WITH CHANNELIZING DEVICE AND PAVEMENT MARKING TAPERS AND TRANSITIONS. CHANNELIZING DEVICES INCLUDE DRUMS, CONES, TUBULAR MARKERS, BARRICADES, RAISED ASPHALT ISLANDS, AND VERTICAL PANELS.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

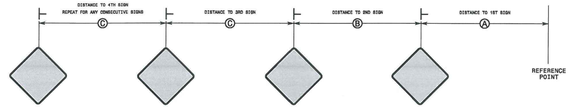
1-12

ENGLISH STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
SPACING OF TEMPORARY SIGNS IN SERIES

SHEET 4 OF 4
1101.11

ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET)*		
	A	B	C
≤ 30	200	200	200
40-50	350	350	350
55	500	500	500
CONTROLLED ACCESS ROADS (≥ 55)	1000	1600	2700

STATIONARY OR PORTABLE SIGNS



GENERAL NOTES

1- REFER TO 2009 MUTCD.
2- USE THIS STANDARD DRAWING IN CONJUNCTION WITH OTHER TRAFFIC CONTROL ROADWAY STANDARD DRAWINGS WHERE SIGN SPACING DISTANCES A, B, C, ARE SPECIFIED.
3- APPLY THE ADVANCE WARNING SIGN SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTION INTERFERENCE, ETC.

DocuSigned by: Mark Reich
58637F049ADB4D7...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR
JOB NO. 13069
DWG NAME: 13069DETAILS.DWG
SHEET NO. 13.2

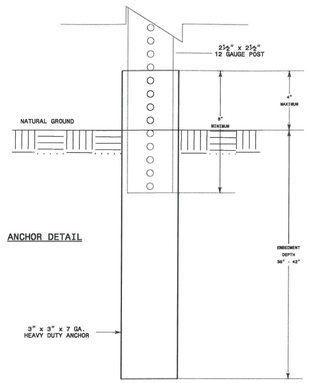
TRAFFIC CONTROL DETAILS

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

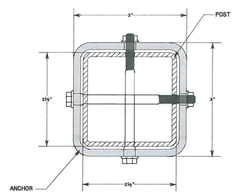
1-12

ENGLISH STANDARD DRAWING FOR
STATIONARY WORK ZONE SIGNS
PERFORATED SQUARE STEEL TUBING

SHEET 3 OF 3
1110.01



ANCHOR DETAIL



POST TO ANCHOR FASTENER DETAIL

GENERAL NOTES

1- POSTS SHALL BE 2½" X 2½" 12 GAUGE STEEL.

2- ANCHORS SHALL BE 3" X 3" 7 GAUGE STEEL.

3- CONNECTIONS SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

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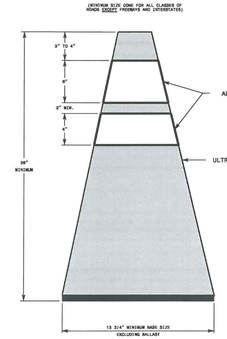
1-12

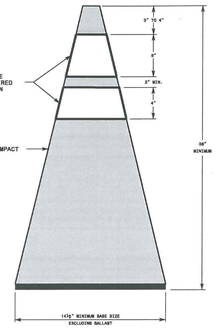
ENGLISH STANDARD DRAWING FOR
CONES

SHEET 1 OF 1
1135.01

28 INCH CONE
(MINIMUM SIZE CONE FOR ALL CLASSES OF ROADS EXCEPT FREEWAYS AND INTERSTATES)



36 INCH CONE
(REQUIRED FOR FREEWAYS AND INTERSTATES)



WHITE RETROREFLECTIVE ADHESIVE SHEETING REQUIRED BETWEEN DUSK AND DAWN

ORANGE ULTRA-VIOLET STABILIZED IMPACT RESISTANT PLASTIC

GENERAL NOTES

1- ACHIEVE BALLASTING BY USING SPECIAL WEIGHTED BASES SUCH AS SAND BAG RINGS, DOUBLING CONES, OR BASES THAT CAN BE FILLED WITH BALLAST. SEVENTY PERCENT OF THE WEIGHT OF THE CONE MUST BE IN THE BASE. USE BALLAST'S THAT DO NOT PRESENT A HAZARD WHEN STRUCK.

2-SEE THE DEPARTMENT'S APPROVED PRODUCTS LIST
AT https://apps.dot.state.nc.us/vendor/approvedproducts.

3-USE TYPE IV OR HIGHER HIGH INTENSITY PRISMATIC SHEETING.

STATE OF NORTH CAROLINA
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RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
PORTABLE WORK ZONE SIGNS
MOUNTING HEIGHT & LATERAL CLEARANCE

SHEET 1 OF 1
1110.02

LATERAL CLEARANCE:
3' MINIMUM FROM TRAVEL LANE. PLACE SIGN BEYOND SHOULDER POINT IF IT CANNOT BE INSTALLED PLUMB. IF SIGN IS PLACED WITHIN A LANE CLOSURE OR ON THE TRAVELWAY THE CLEARANCE APPLIES FROM THE OPEN LANE

SIGN STANDARD MOUNTING HARDWARE FOR APPROVED SIGN SUBSTRATE MATERIAL

MOUNTING HEIGHT DIMENSIONS:
FOR TWO LANE, TWO WAY ROADWAYS INCLUDING THOSE WITH CONTINUOUS LEFT-TURN LANES, THE HEIGHT BETWEEN ROADWAY TO SIGN SHALL BE 5' MINIMUM.
FOR ALL OTHER ROADWAYS THE HEIGHT BETWEEN ROADWAY TO SIGN SHALL BE 6' MINIMUM.

TRAVEL LANE
PAVED SHOULDER
SHOULDER POINT

IF SUPPLEMENTAL PANEL IS REQUIRED USE A 6' MINIMUM HEIGHT TO MAIN SIGN WITH A 5' MINIMUM HEIGHT TO PANEL

GENERAL NOTES

1- DIMENSIONS SHOWN ARE MINIMUM VALUES. MOUNT SIGNS SO THEY WILL BE CLEARLY VISIBLE TO APPROACHING TRAFFIC EVEN WHEN SIGNS ARE MOUNTED BEHIND TRAFFIC CONTROL DEVICES SUCH AS DRUMS, BARRIER, OR OTHER OBJECTS.

2- ALL PORTABLE SIGNS AND STANDS MUST MEET OR EXCEED THE REQUIREMENTS OF NCHRP 350 FOR CATEGORY II DEVICES. USE PORTABLE WORK ZONE SIGNS AND STANDS SPECIFICALLY DESIGNED FOR ONE ANOTHER.

3- ALL PORTABLE WORK ZONE SIGNS AND STANDS MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST AT https://apps.dot.state.nc.us/vendor/approvedproducts.

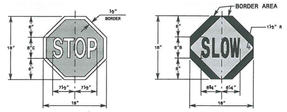
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
FLAGGERS

SHEET 1 OF 1
1150.01

STOP/SLOW PADDLE

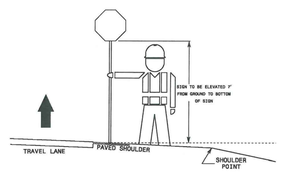


STOP:
LEGEND WHITE REFLECTORIZED
BORDER-WHITE REFLECTORIZED
BACKGROUND-RED REFLECTORIZED

SLOW:
LEGEND BLACK REFLECTORIZED
BORDER AREA BLACK REFLECTORIZED
BACKGROUND-ORANGE REFLECTORIZED

NOTE: FOR DEVIATIONS THAT ARE RESTRICTED FROM DUSK TO DAWN ONLY, USE REFLECTORIZED LEGENDS, BORDERS AND BACKGROUNDS.

FLAGGER AND PADDLE PLACEMENT



GENERAL NOTES

1- USE HAND SIGNALING DEVICES SUCH AS STOP-SLOW PADDLES, FLASHLIGHTS TO CONTROL TRAFFIC. USE STOP-SLOW PADDLES AS THE PRIMARY DEVICE.

2- FABRICATE STOP-SLOW PADDLES FROM SHEET METAL OR OTHER LIGHT SEMI RIGID MATERIAL. PROVIDE A RIGID HANDLE OF SUFFICIENT LENGTH SO THE PADDLE IS HELD AT 7 FEET ABOVE GROUND LEVEL.

3- PROVIDE STOPPING SIGHT DISTANCE TO EACH FLAGGER STATION (REFER TO STD. 1101.11 SHEET 2).

4- ILLUMINATE FLAGGER STATIONS DURING NIGHT OPERATIONS.

5- FOLLOW FLAGGER QUALIFICATIONS AND METHODS OF HAND-SIGNALING PROCEDURES IN ACCORDANCE WITH PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

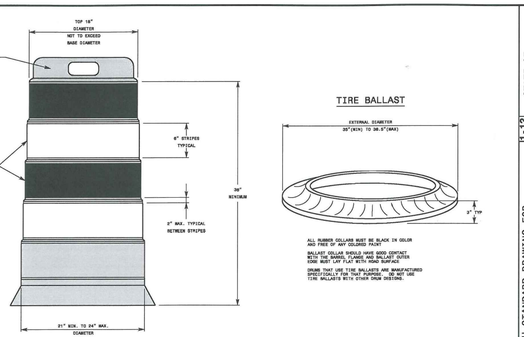
6- ALL FLAGGERS MUST BE CERTIFIED BY AN NCDOT APPROVED SOURCE.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
DRUM

SHEET 1 OF 1
1130.01



TIRE BALLAST

ALL RUBBER COLLARS MUST BE BLACK IN COLOR (NO TIRES OF ANY COLORED RIM)

BALLAST COLLAR SHOULD HAVE GOOD CONTACT BETWEEN COLLAR AND ROAD AND BALLAST OUTER EDGE MUST LAY FLAT WITH ROAD SURFACE

DRUMS THAT USE TIRE BALLASTS ARE MANUFACTURED SPECIFICALLY FOR THAT PURPOSE. DO NOT USE TIRE BALLASTS WITH OTHER DRUM DESIGNS.

GENERAL NOTES

1- BALLASTING SHALL BE ACHIEVED BY THE SAND BAG, TIRE-SIDEWALL, OR PREFORMED WEIGHTED BASE METHODS. USE THE TIRE BALLAST AS SPECIFIED BY THE MANUFACTURER. DO NOT PLACE BALLAST ON TOP OF THE DRUM.

2- IF NECESSARY PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE DRUM SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.

3- USE TYPE 3 OR HIGHER HIGH INTENSITY PRISMATIC SHEETING.

4- SEE THE DEPARTMENT'S APPROVED PRODUCT LIST AT https://apps.dot.state.nc.us/vendor/approvedproducts.

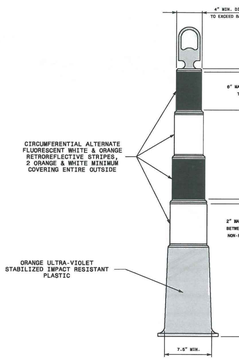
5- REFER THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR ADDITIONAL INFORMATION.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

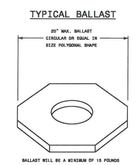
1-12

ENGLISH STANDARD DRAWING FOR
SKINNY-DRUM

SHEET 1 OF 1
1180.01



TYPICAL BALLAST



GENERAL NOTES

1- USE BALLAST AS SPECIFIED BY THE MANUFACTURER. DO NOT PLACE BALLAST ON TOP OF THE DRUM.

2- IF NECESSARY, PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.

3- REFER TO SECTION 1180, STANDARD SPECIFICATIONS FOR ROADS AND INSTRUCTIONS FOR ADDITIONAL REQUIREMENTS.

4- USE TYPE 3 OR HIGHER HIGH INTENSITY PRISMATIC SHEETING.

5- SEE THE DEPARTMENT'S APPROVED PRODUCTS LIST AT https://apps.dot.state.nc.us/vendor/approvedproducts.

PRELIMINARY DRAWING
NOT APPROVED FOR CONSTRUCTION

DocuSigned by:
Mark Reich
58637F049ADB4...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14
DRAWN BY: WDF
CHECKED BY: MDR

TRAFFIC CONTROL DETAILS

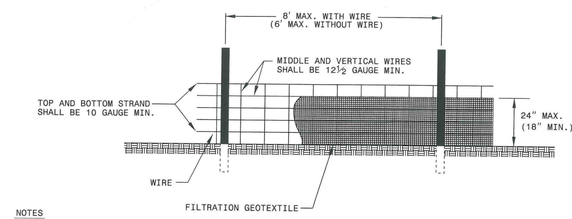
JOB NO. 13069
DWG NAME: 13069DETAILS.DWG
SHEET NO. 13.3

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR

TEMPORARY SILT FENCE



NOTES

USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.

USE FILTRATION GEOTEXTILE A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE WIRE AS DIRECTED.

PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.

FOR MECHANICAL SLICING METHOD INSTALLATION, GEOTEXTILE SHALL BE A MAXIMUM OF 18" ABOVE GROUND SURFACE.

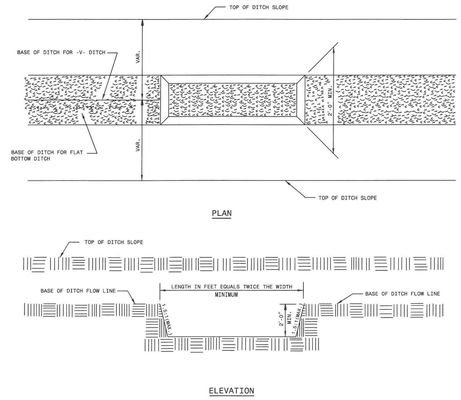
SHEET 1 OF 1
1605.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR

SILT BASIN TYPE B



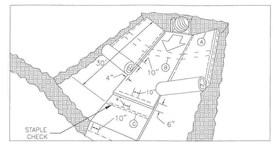
SHEET 1 OF 1
1630.02

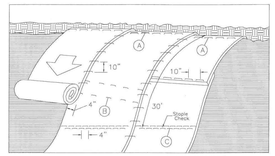
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

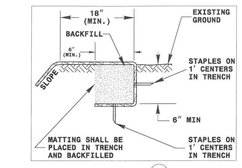
1-12

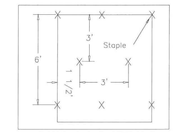
ENGLISH STANDARD DRAWING FOR

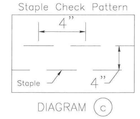
MATTING INSTALLATION











NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

SHEET 1 OF 1
1631.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR

SPECIAL SEDIMENT CONTROL FENCE

NOTES

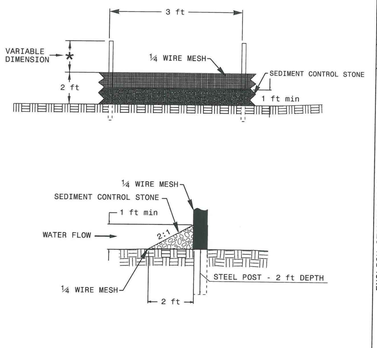
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.

USE HARDWARE CLOTH 24 GAUGE WIRE MESH WITH ¼ INCH MESH OPENINGS.

INSTALL 5 FT. SELF FASTENER ANGLE STEEL POST 2 FT. DEEP MINIMUM.

SPACE POST A MAXIMUM OF 3 FT.

FOR INSTALLATION BETWEEN SECTIONS OF SILT FENCE, EXTEND SEDIMENT CONTROL STONE A MINIMUM OF 12" IN WIDTH ON EACH SIDE OF SPECIAL SEDIMENT CONTROL FENCE SECTION.



SHEET 1 OF 1
1606.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR

STILLING BASIN FOR PUMPED EFFLUENT

NOTES

INSTALL COIR FIBER BAFFLES IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1640.01.

INSTALL THE TOP OF THE COIR FIBER BAFFLE A MINIMUM OF 6" LOWER THAN THE TOP OF THE STILLING BASIN BERMS.

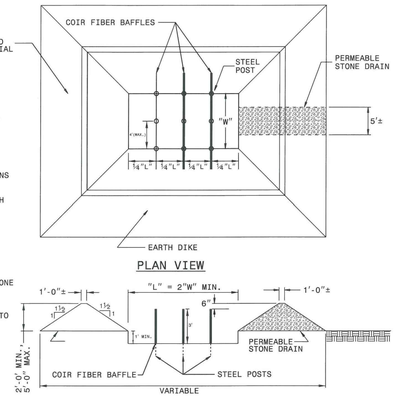
USE THE TYPICAL SECTION SHOWN FOR THE STILLING BASIN AS A GUIDE. THE BASIN MAY HAVE ANY TYPE CONFIGURATION AS LONG AS SUFFICIENT VOLUME IS PROVIDED AND PROVISIONS ARE MADE FOR A PERMEABLE STONE DRAIN.

DO NOT EXCEED 5 FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR STILLING BASINS. ADDITIONAL DEPTHS MAY BE ATTAINED BY EXCAVATING BELOW THE NATURAL GROUND LEVEL.

THE STILLING BASIN SIZE IS VARIABLE AND DEPENDENT ON SPECIFIC SITE REQUIREMENTS AS WELL AS PROPOSED CONSTRUCTION OPERATIONS.

SUBMIT THE SIZE, LOCATION AND PERMEABLE STONE DRAIN MATERIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

PUMP THE EFFLUENT INTO THE STILLING BASIN TO A MAXIMUM DEPTH OF 3 FEET.



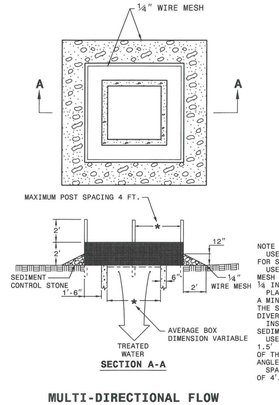
SHEET 1 OF 1
1630.04

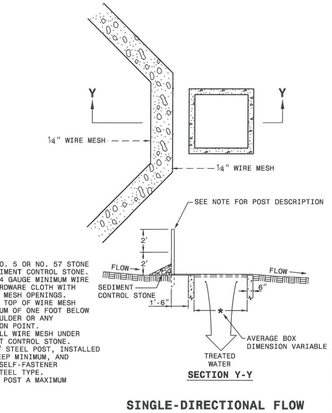
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR

ROCK INLET SEDIMENT TRAP TYPE C





NOTE
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
USE 24 GAUGE MINIMUM WIRE MESH HARDWARE CLOTH WITH ¼ INCH MESH OPENINGS.
PLACE TOP OF WIRE MESH A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.
INSTALL WIRE MESH UNDER SEDIMENT CONTROL STONE.
USE 5' STEEL POST, INSTALLED 1.5' DEEP MINIMUM, AND OF THE SELF-FASTENER ANGLE STEEL TYPE.
SPACE POST A MAXIMUM OF 4'.

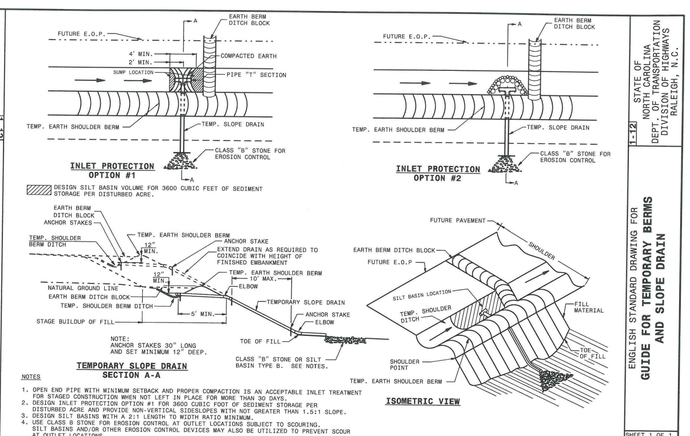
SHEET 1 OF 1
1632.03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR

GUIDE FOR TEMPORARY BERMS AND SLOPE DRAIN



NOTES

1. OPEN END PIPE WITH MINIMUM SETBACK AND PROPER COMPACTION IS AN ACCEPTABLE INLET TREATMENT FOR STAGED CONSTRUCTION WHEN NOT LEFT IN PLACE FOR MORE THAN 30 DAYS.
2. DESIGN INLET PROTECTION OPTION #1 FOR 3600 CUBIC FOOT OF SEDIMENT STORAGE PER DISTURBED ACRE AND PROVIDE NON-VERTICAL SIDESLOPES WITH NOT GREATER THAN 1.5:1 SLOPE.
3. DESIGN SILT BASINS WITH A 2:1 LENGTH TO WIDTH RATIO MINIMUM.
4. USE CLASS B STONE FOR EROSION CONTROL AT OUTLET LOCATIONS SUBJECT TO SCOURING. SILT BASINS AND/OR OTHER EROSION CONTROL DEVICES MAY ALSO BE UTILIZED TO PREVENT SCOUR AT OUTLET LOCATIONS.
5. USE MAXIMUM SLOPE DRAIN SPACING OF 200 FT.

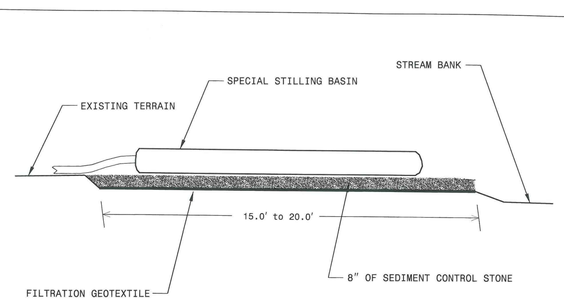
SHEET 1 OF 1
1622.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR

SPECIAL STILLING BASIN



NOTES

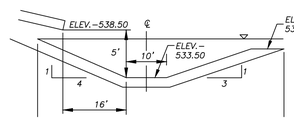
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.

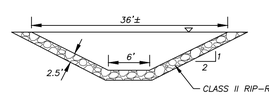
PROVIDE STABILIZED OUTLET TO STREAM BANK.

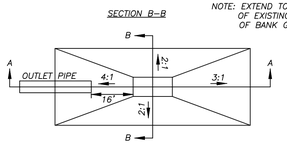
WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE SPECIAL STILLING BASIN ABOVE NATURAL GROUND.

NOT TO SCALE

SHEET 1 OF 1
1630.06







RIP-RAP LINED PLUNGE POOL FOR CANTILEVER OUTLET

REV. 3/12/15 ADDED PLUNGE POOL DETAIL

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DocuSigned by: Mark Reich 58637F049AD1427...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

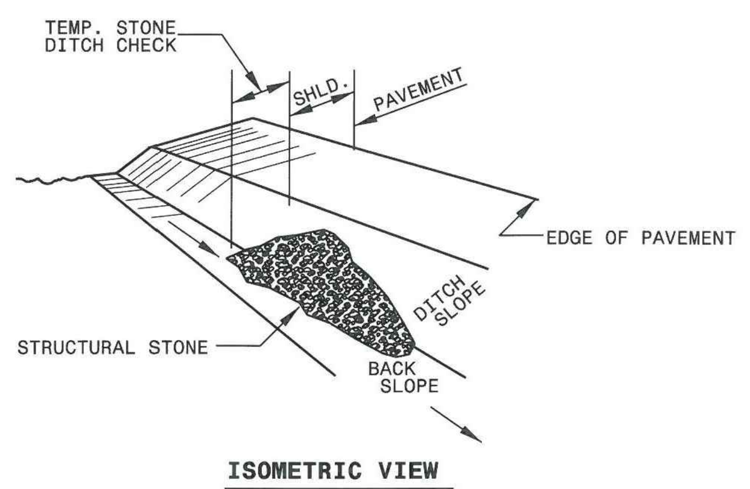
DATE:	JOB NO. 13069
8/15/14	DWG NAME: 13069DETAILS.DWG
DRAWN BY: WDF	EROSION CONTROL DETAILS
CHECKED BY: MDR	SHEET NO. 14.1

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR

TEMPORARY ROCK SILT CHECK TYPE B

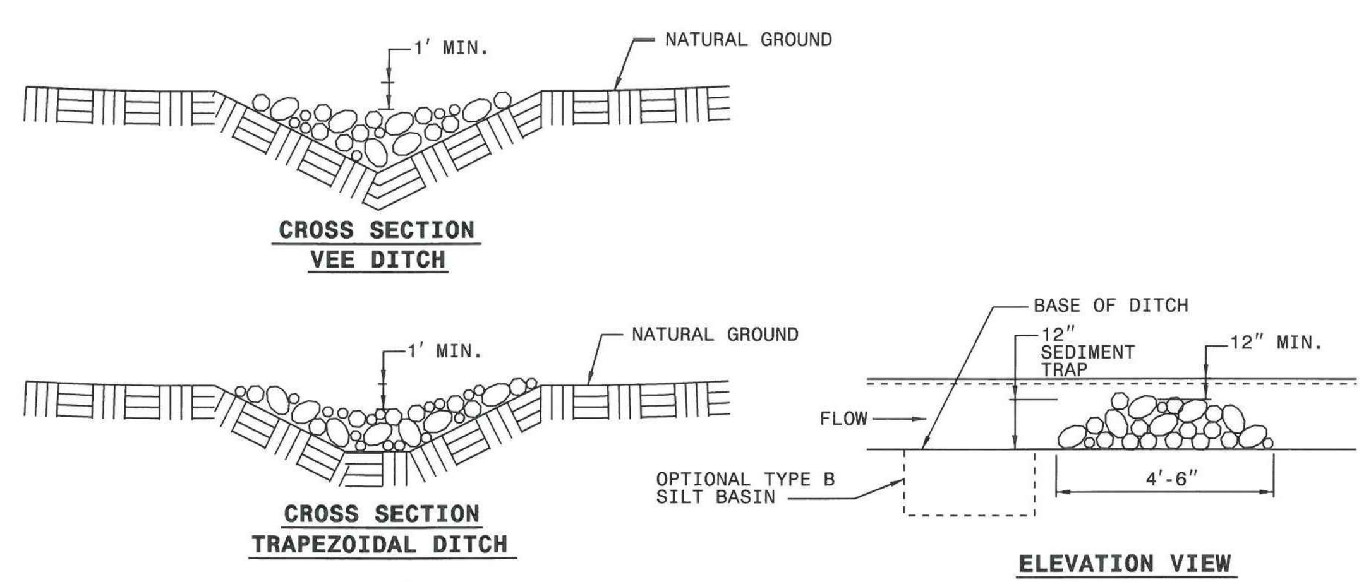


NOTES:

USE CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE.

THE ENGINEER MAY DIRECT THE OPTION OF CLASS A STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.

USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL. PLACE SEDIMENT CONTROL STONE AS DIRECTED.



SHEET 1 OF 1

1633.02

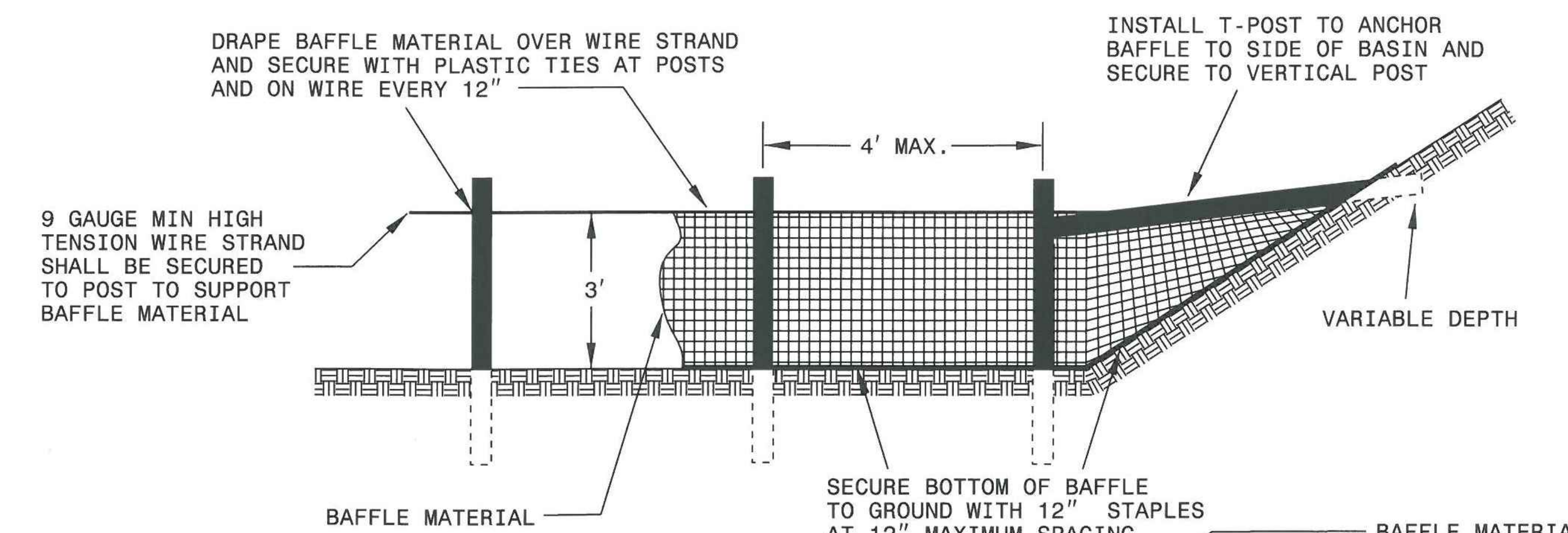
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12
ENGLISH STANDARD DRAWING FOR TEMPORARY ROCK SILT CHECK TYPE B
SHEET 1 OF 1 1633.02

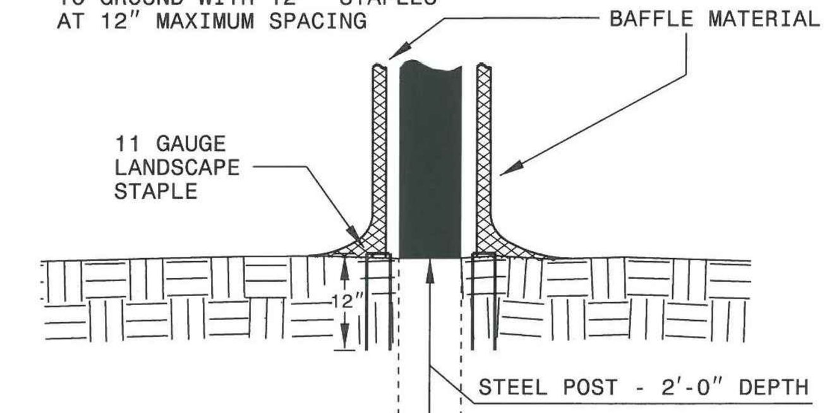
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR

COIR FIBER BAFFLE





NOTES:

1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF ¼ THE BASIN LENGTH.

2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

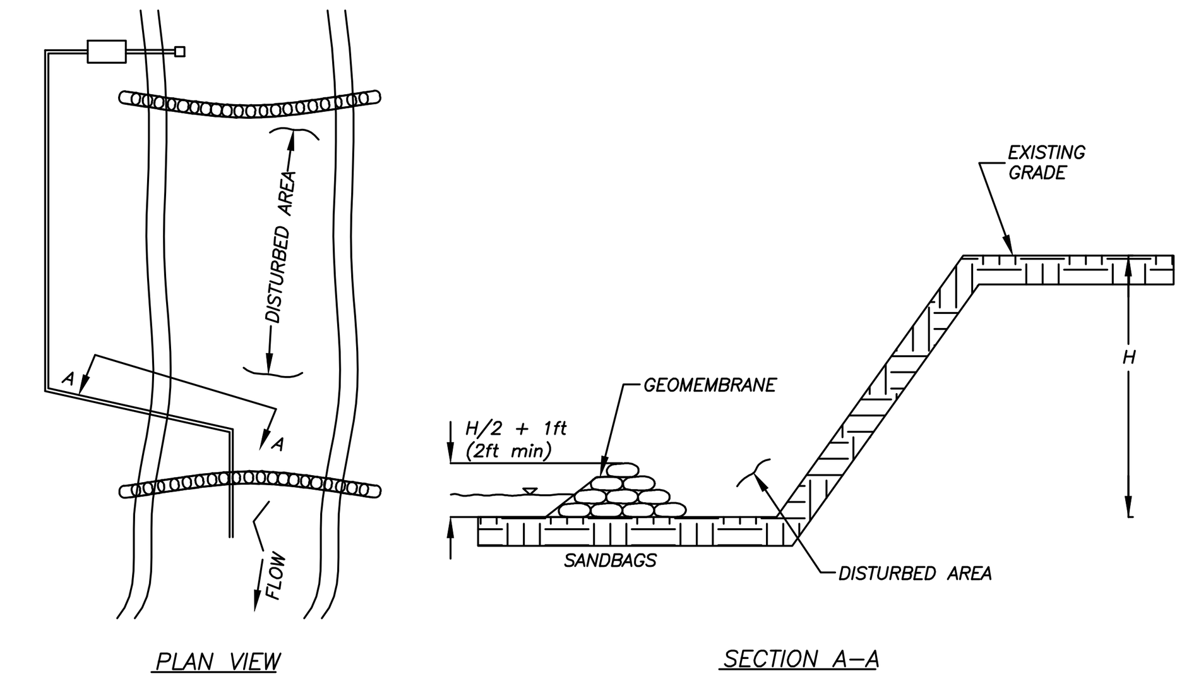
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.

BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12" LANDSCAPE STAPLES

SHEET 1 OF 1

1640.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12
ENGLISH STANDARD DRAWING FOR COIR FIBER BAFFLE
SHEET 1 OF 1 1640.01



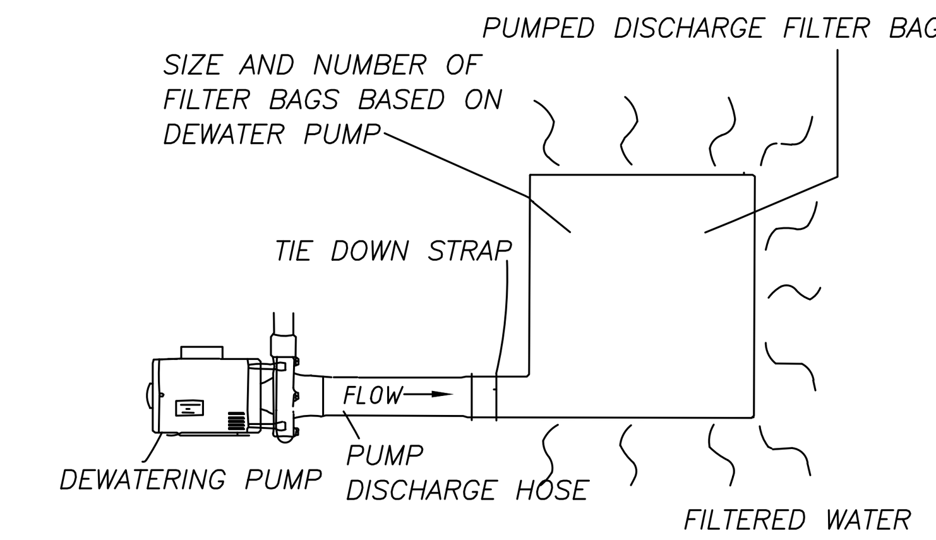
I. DESCRIPTION
THE WORK SHALL CONSIST OF INSTALLING A PUMP AROUND WHEN CONSTRUCTION ACTIVITIES TAKE PLACE WITHIN THE STREAM CHANNEL

II. MATERIAL SPECIFICATIONS
SANDBAGS: SANDBAGS SHALL CONSIST OF MATERIALS WHICH ARE RESISTANT TO ULTRAVIOLET RADIATION, TEARING AND PUNCTURE, AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL (i.e. SAND, FINE GRAVEL, ETC.)

III. CONSTRUCTION REQUIREMENTS
1. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF WORK.
2. THE HEIGHT OF THE SANDBAGS SHALL BE AS INDICATED IN SECTION A–A. THE SANDBAGS SHALL BE PLACED ON A SMOOTH PREPARED SURFACE.
3. ALL EXCAVATED MATERIALS SHALL BE DISPOSED OF OUTSIDE THE 100 YEAR FLOOD PLAIN UNLESS APPROVED ON THE PLANS.
4. ALL DEWATERING OF THE CONSTRUCTION AREA SHALL BE PUMPED TO A DEWATERING PUMP DISCHARGE FILTER BAG OR SILT BASIN.
5. THE PUMP SHALL BE OF SUFFICIENT SIZE TO CONVEY NORMAL STREAM FLOW.
6. SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED AND THE CITY ENGINEERING DEPT APPROVES THEIR REMOVAL.

TEMPORARY CREEK CROSSING PUMP AROUND

C.O.B. STD. DETAIL SE-20



Installation

1. Lifting straps, should be placed under the filter bag to facilitate removal after use.
2. Place the filter bag on a level stabilized area over dense vegetation/straw, or gravel (if increased drainage surface area is required).
3. Insert discharge hose from pump into the filter bag a minimum of six inches (6") and tightly secure with strap to prevent water from flowing out of the without being filtered
4. Replace the unit when one half (1/2) full of sediment or when sediment has reduced the flow rate of the pump discharge to an impractical rate

Maintenance

Remove and dispose of the sediment in a manner satisfactory to the engineer/inspector or in one of the following ways:

1. Remove the unit and sediment from environmentally sensitive area and waterways. At the approved dis–posal site open or slit the unit, remove sediment and grade smoothly into existing topography. Dispose of the filter bag, no longer in use, at an appropriate recycling or solid waste facility.
2. Bury unit on site; remove visible fabric and seed

DEWATERING PUMP DISCHARGE FILTER BAG

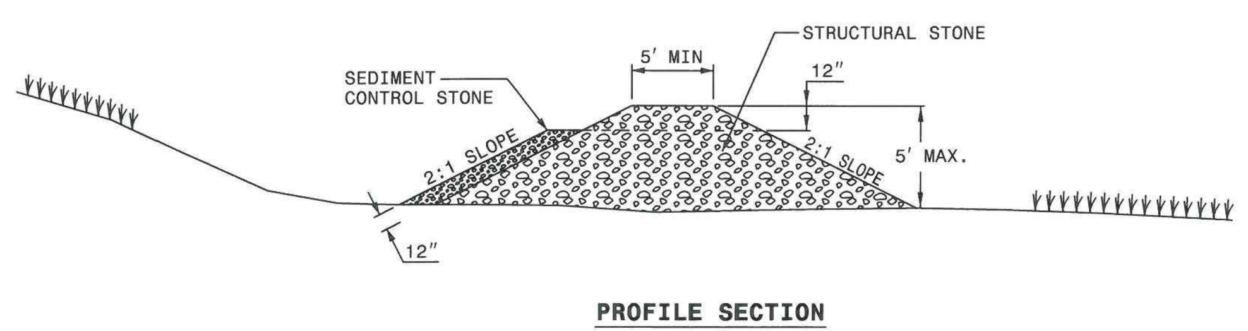
C.O.B. STD. DETAIL SE-19

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

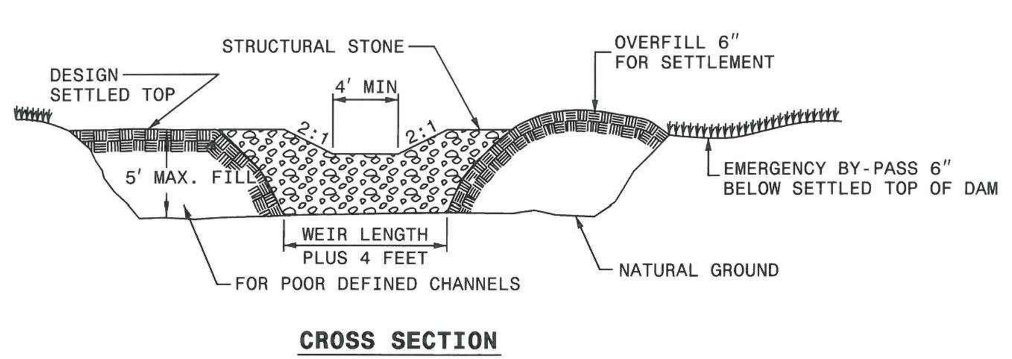
1-12

ENGLISH STANDARD DRAWING FOR

TEMPORARY ROCK SEDIMENT DAM TYPE B



DRAINAGE AREA (ACRES)	WEIR LENGTH (FT)
1	4.0
2	6.0
3	8.0
4	10.0
5	12.0



NOTES

USE CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE.
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
DIKE MAY EXTEND ALONG MORE THAN ONE SIDE OF THE TRAP AREA. PROVIDE A TOTAL SEDIMENT STORAGE VOLUME OF 3600± CUBIC FEET PER ACRE OF DISTURBED AREA. SOME OF THE REQUIRED VOLUME MAY BE PROVIDED BY OTHER UP OR DOWNSTREAM CONTROLS.
AN UNDERLAY OF STRUCTURAL STONE WITH FILTRATION GEOTEXTILE MAY BE REQUIRED AS DIRECTED.
INSTALL COIR FIBER BAFFLES ON THE UPSTREAM SIDE OF THE DAM IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1640.
SEED AND PLACE MATTING FOR EROSION CONTROL ON ALL INTERIOR AND EXTERIOR SLOPES OF SEDIMENT BASIN AS DIRECTED.

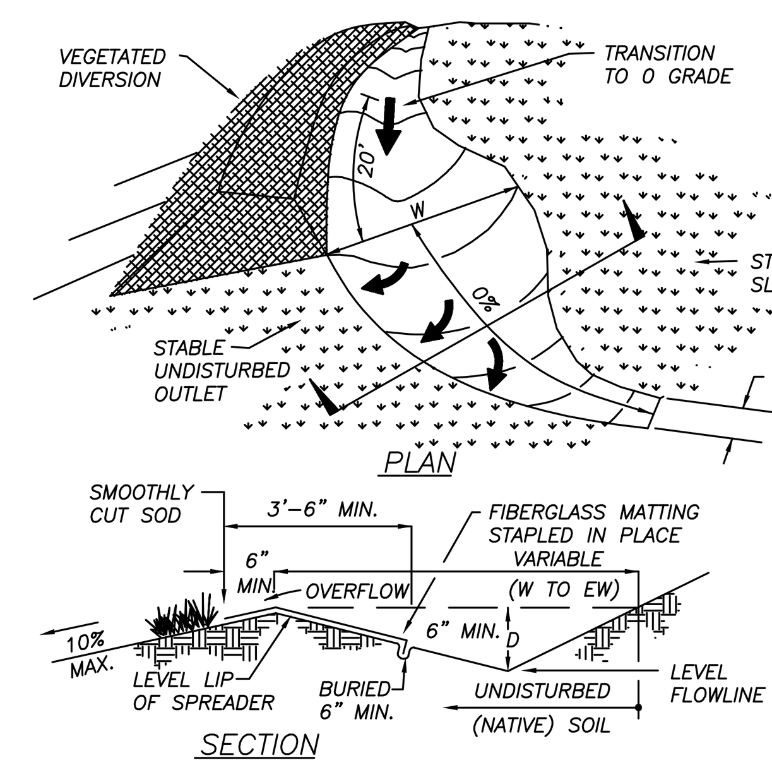
SHEET 1 OF 1

1634.02

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12
ENGLISH STANDARD DRAWING FOR TEMPORARY ROCK SEDIMENT DAM TYPE B
SHEET 1 OF 1 1634.02

GENERAL EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES AND DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH NCDOT & NCDENR - LAND QUALITY SECTION "EROSION AND SEDIMENT CONTROL MANUAL" REQUIREMENTS.
2. ALL SLOPES SHALL BE SEEDED AND MULCHED WITHIN AT LEAST 14 CALENDAR DAYS OF COMPLETION OF GRADING PHASE. SEE NEW STABILIZATION TIME FRAMES FOR ADDITIONAL INFORMATION.
3. REMOVE ANY MUD OR SOIL MATERIALS TRACKED ONTO ADJOINING ROADS IMMEDIATELY.
4. PROVIDE ADDITIONAL MEASURES AS NEEDED TO DIRECT RUNOFF TO EROSION CONTROL DEVICES AS DIRECTED BY THE ENGINEER.
5. INSPECT ALL EROSION CONTROL MEASURES ON A WEEKLY BASIS AND WITHIN 24 HOURS OF A 0.5 IN. RAINFALL EVENT (WITHIN A 24 HOUR PERIOD). CONTRACTOR SHALL REPAIR OR PROVIDE ANY REQUIRED MAINTENANCE NOTED DURING INSPECTION AND PRIOR TO CONTINUING WITH ANY CONSTRUCTION ACTIVITIES.
6. CONTRACTOR SHALL PROVIDE A RAIN GAUGE ON SITE AND SHALL COMPLETE "STORMWATER INSPECTIONS FOR GENERAL PERMIT NCG010000 - LAND DISTURBING ACTIVITIES" FORM ON A WEEKLY BASIS. PROVIDE COPIES OF REPORT TO OWNER/ENGINEER ON A MONTHLY BASIS.
7. ANY WASTE MATERIAL DISPOSED OF OFF-SITE SHALL BE DISPOSED OF TO A SITE APPROVED BY NCDENR, LQS.
8. ANY BORROW MATERIAL SHALL BE OBTAINED FROM AN NCDENR, LQS APPROVED SITE.
9. PROVIDE COPIES OF APPROVAL LETTERS FOR WASTE/BORROW SITES TO ENGINEER PRIOR TO DISPOSING OF OR OBTAINING MATERIAL FROM SITES.
10. CONTRACTOR SHALL PROVIDE ENGINEER WITH A COPY OF THE CERTIFICATION OF ALL EMPLOYEES MAINTAINING AND INSTALLING EROSION CONTROL DEVICES.



D–F cfs	W	D	EW	L
0–10	10	0.5	3	10
10–20	16	0.6	3	20
20–30	24	0.7	3	30

D–F = DESIGN FLOW
W = ENTRANCE WIDTH
D = DEPTH
EW = END WIDTH
L = LENGHT

LEVEL SPREADER

Erosion Control Blanket For Swales			
Left Ditch			
Start Sta	End Sta	Length (LF)	Remarks
12+00 ±	13+00 ±	100	
13+65 ±	17+50 ±	385	
19+00 ±	20+00 ±	100	
22+00 ±	23+00 ±	100	Tie into Existing Ditch
22+90 ±	26+65 ±	375	
30+60 ±		25	Upstream of Structure 20
32+65 ±	33+15 ±	50	
Right Ditch			
Start Sta	End Sta	Length (LF)	
17+10 ±	18+00 ±	90	
19+50 ±	30+00 ±	1050	
Total Length (LF)		2275	Assumes 8'W standard role
Total Blanket for Swales (SY)		2022	

Erosion Control Blanket For Slopes		
Left Slope		
Start Sta	End Sta	Area (SY)
22+90	23+85	95
24+55	25+95	200
30+00	31+08	185
Right Slope		
Start Sta	End Sta	Area (SY)
6+05	7+80	325
8+75	9+50	60
13+50	16+50	265
18+00	27+50	1110
30+05	33+00	840
At Level Spreader		65
Total Slope Blanket (SY)		3145

Total Erosion Control Blanket (SY)	
Ditches	2022
Slopes	3145
Other	133
Total	5300

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

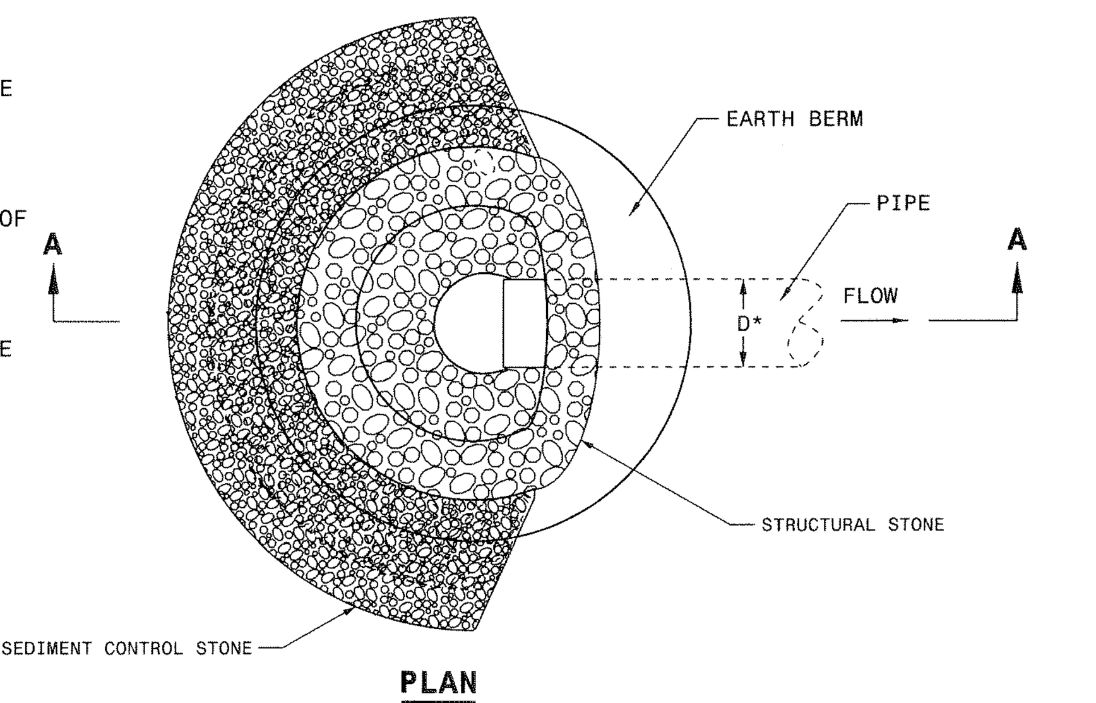
1-12

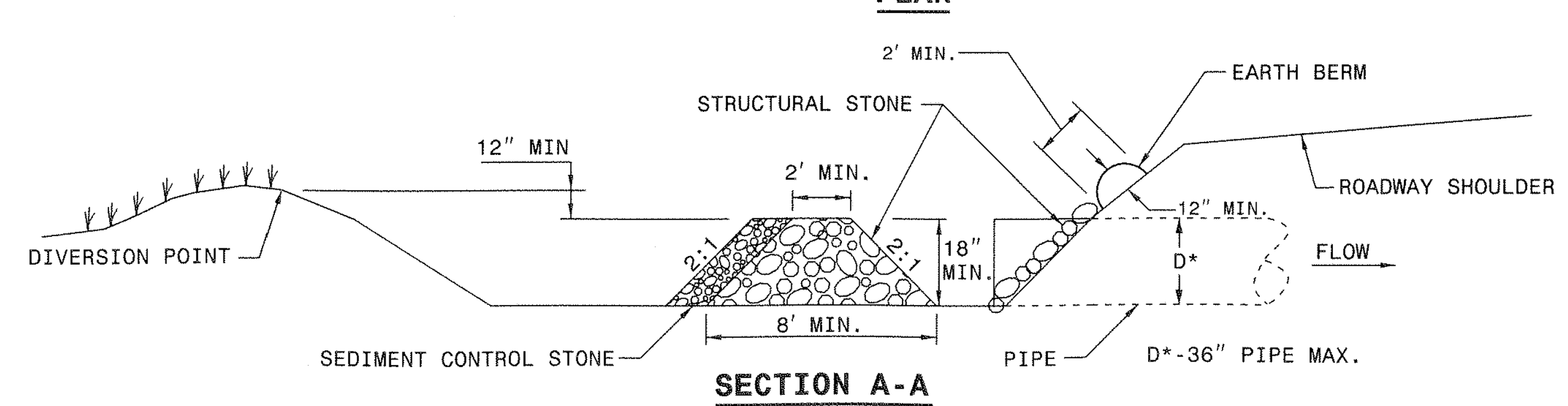
ENGLISH STANDARD DRAWING FOR

ROCK PIPE INLET SEDIMENT TRAP TYPE A

NOTES

USE CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE.
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
CONSTRUCT TOP OF BERM A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR DIVERSION POINT.
PROVIDE A TOTAL SEDIMENT TRAP VOLUME OF 3600± CUBIC FEET PER ACRE OF DISTURBED AREA. SOME OF THE REQUIRED VOLUME MAY BE PROVIDED BY UP OR DOWNSTREAM CONTROLS.
DO NOT INSTALL WHEN DEVICE WILL BE WITHIN 30 FEET OF VEHICULAR TRAVEL LANE.





SHEET 1 OF 1

1635.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12
ENGLISH STANDARD DRAWING FOR ROCK PIPE INLET SEDIMENT TRAP TYPE A
SHEET 1 OF 1 1635.01

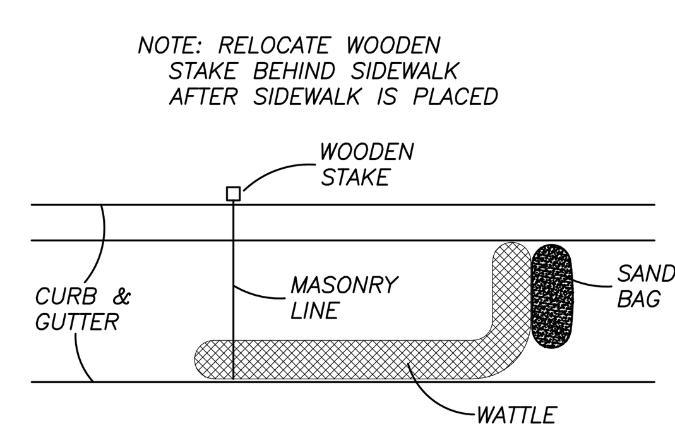
PERMANENT SEEDING SPECIFICATIONS

PROVIDE SEEDING & MULCHING FOR THE ENTIRE PROJECT IN ACCORDANCE WITH THE FOLLOWING SCHEDULE PER 1,000 SQUARE FEET:

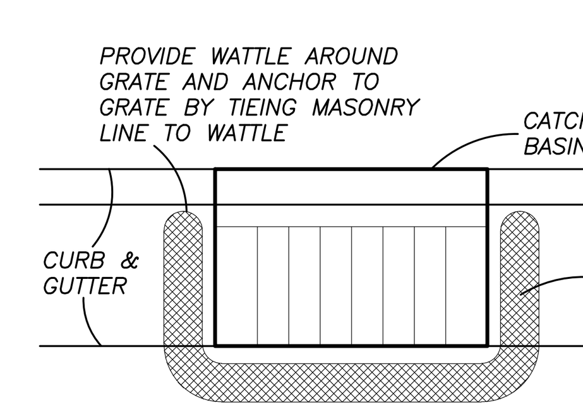
100 LBS. OF LIME
20 LBS. OF 10–20–10 OR 20 LBS. OF 10–10–10 IN COMBINATION WITH 4 LBS. OF 0–46–0
5 LBS. OF TALL FESCUE, CONTAINING A BLEND OF 2 OR MORE TALL FESCUES
1 LB. OF KENBLUE OR KENTUCKY BLUEGRASS
1 LB. OF WINTER ANNUAL RYE (NOVEMBER 1 TO MARCH 1)

MULCH AFTER SEEDING WITH 2 BALES OF GRAIN STRAW PER 1,000 SF AND EITHER CRIMP STRAW INTO SOIL OR TACK WITH LIQUID ASPHALT AT 400 GALLONS PER ACRE OR EMULSIFIED ASPHALT AT 300 GALLONS PER ACRE.

NEW STABILIZATION TIMEFRAMES		
Site Area Description	Stabilization	Timeframe Expectations
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.



WATTLE DETAIL (TYPE 'A')



WATTLE DETAIL (TYPE 'B')

DocuSigned by: Mark Reich 58637F049ADB4…

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

REV. 8/24/15 PER NCDOT COMMENTS
REV. 3/12/15 CHANGED 1635.02 TO 1635.01
REV. 3/12/15 ADDED PUMP DETAILS
REV. 4/2/15 UPDATED CHART

NCDOT PROJECT NO. EB-3314 E

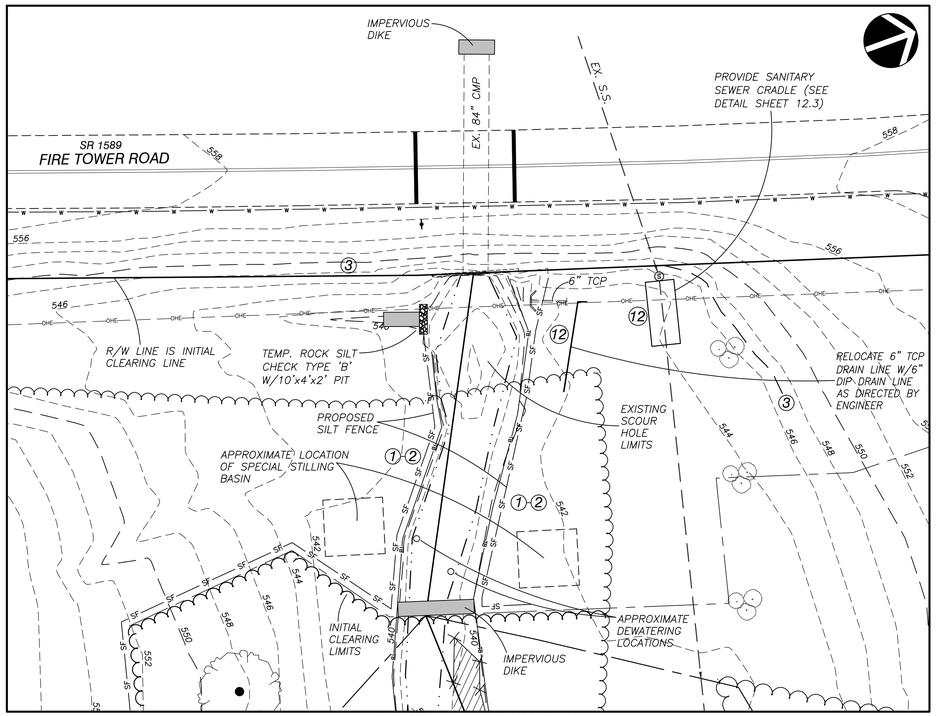
PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

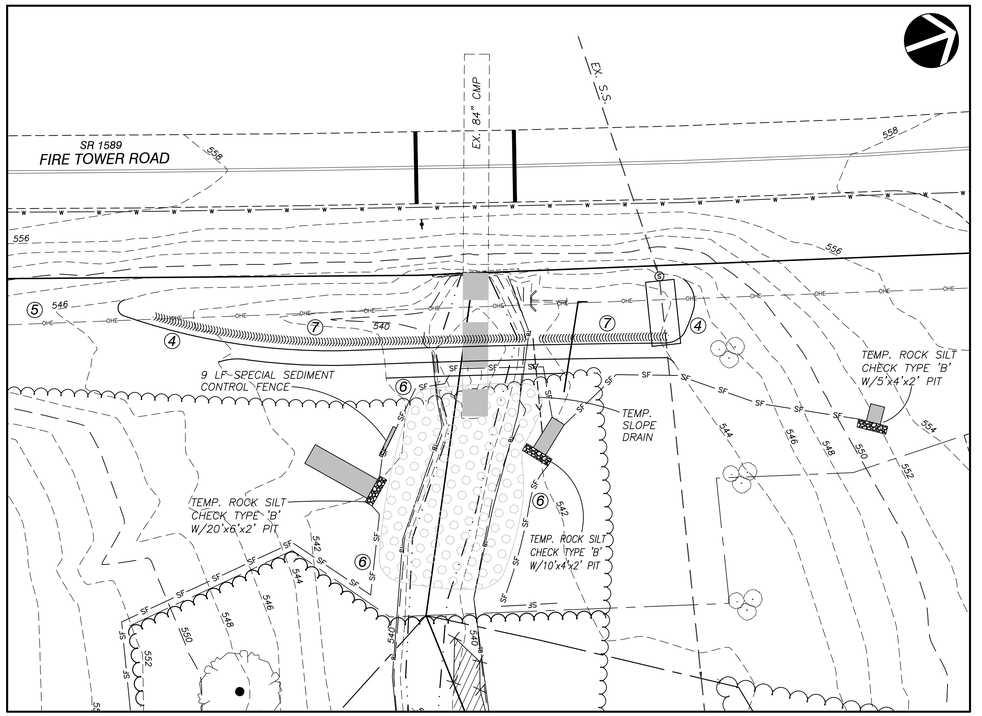
alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road, burlington, n.c. 27215
p.o. box 1179, 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14	EROSION CONTROL DETAILS	JOB NO. 13069
DRAWN BY: WDF		DWG NAME: 13069DETAILS.DWG
CHECKED BY: MDR		SHEET NO. 14.2



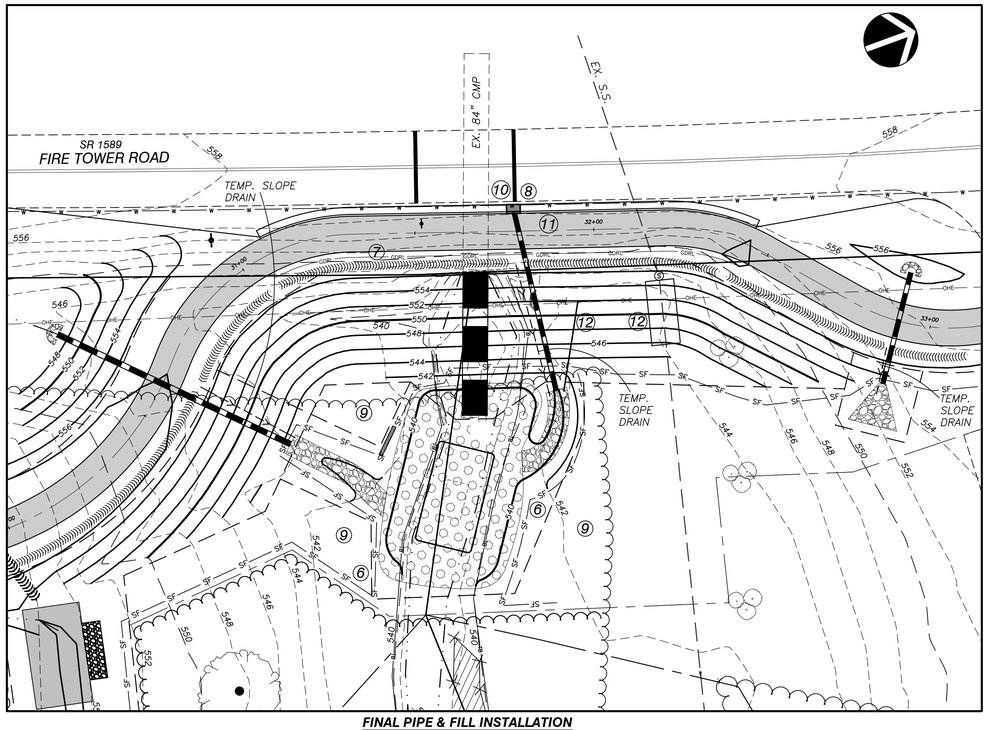
INITIAL PIPE & FILL INSTALLATION

SCALE: 1" = 20'



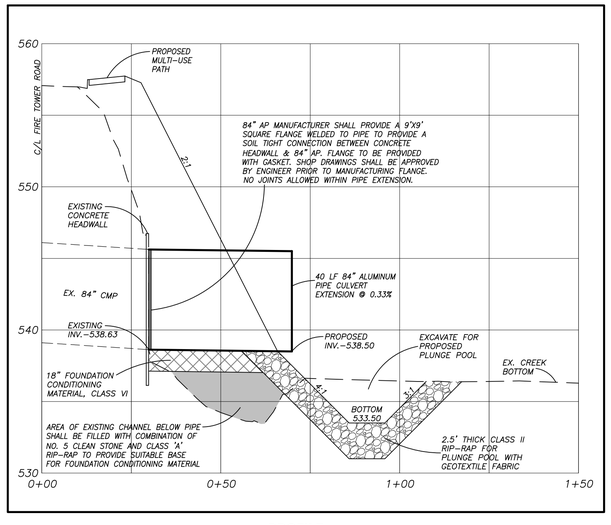
INTERMEDIATE PHASE PLAN

SCALE: 1" = 20'



FINAL PIPE & FILL INSTALLATION

SCALE: 1" = 20'



PROFILE

SCALE: 1" = 20'H
1" = 5'V

EROSION CONTROL SEQUENCE FOR 84" AP CULVERT EXTENSION:

1. CLEAR & GRUB TO INITIAL CLEARING LIMITS. INSTALL SILT FENCE ALONG TOP OF BANK IMMEDIATELY AFTER (SAME DAY) AREA IS CLEARED. IN ADDITION, INSTALL A ROCK SILT CHECK TYPE 'B' WITH PIT IN EXISTING DITCH.
2. INSTALL IMPERVIOUS DIKE ACROSS EXISTING CHANNEL, DOWNSTREAM OF PROPOSED PLUNGE POOL AND UPSTREAM OF EXISTING 84" CMP CULVERT.
3. PROVIDE BYPASS PUMPING OPERATIONS OF BASE FLOW FROM UPSTREAM IMPERVIOUS DIKE TO DOWNSTREAM SIDE OF DOWNSTREAM IMPERVIOUS DIKE. PUMP DISCHARGE PIPE MAY BE INSTALLED IN EXISTING 84" CMP.
4. PROVIDE DEWATERING OPERATIONS DURING FILLING OF EXISTING CHANNEL AND EXCAVATION OF PLUNGE POOL. PROVIDE A MINIMUM OF (2) SPECIAL STILLING BASIN PADS (NCDOT DETAIL 1630.06), (1) EACH ON EACH SIDE OF EXISTING CREEK.
5. CONTRACTOR SHALL REMOVE ANY LOOSE OR SOFT MATERIALS IN BOTTOM OF CHANNEL AND UNDERCUT IF NECESSARY AS DIRECTED BY THE ENGINEER. INSTALL A GEOTEXTILE FOR DRAINAGE, TYPE 2 FABRIC ON STABLE SUBGRADE, PLACING CLASS 'A' RIP-RAP AND NO. 5 STONE TO FILL IN VOIDS BETWEEN RIP-RAP TO FORM A STABLE SUBGRADE FOR FOUNDATION CONDITIONING MATERIAL.

6A. CONTRACTOR SHALL EXCAVATE FOR PLUNGE POOL. IF CONTRACTOR ENCOUNTERS ROCK, CONTRACTOR SHALL NOT BE PERMITTED TO BLAST IN STREAM. IF NATURAL ROCK IS ENCOUNTERED, REMOVE ALL LOOSE ROCK DOWN TO SOLID ROCK THAT CAN BE REMOVED WITH EXCAVATOR AS DIRECTED BY ENGINEER.

6B. IF PLUNGE POOL CAN BE EXCAVATED, INSTALL GEOTEXTILE FOR DRAINAGE, TYPE 2 FABRIC AND PLACE RIP-RAP PER PLUNGE POOL DETAILS.

7. UNDERCUT ANY SOFT OR UNSTABLE AREAS WITHIN INITIAL PROPOSED FILL LIMITS AND PROVIDE A SUITABLE SUBBASE SURFACE FOR PROPOSED FILL ON EACH SIDE OF THE CULVERT.
8. PLACE FOUNDATION CONDITIONING MATERIAL UNDER PROPOSED CULVERT AND ENCAPSULATE THE FOUNDATION CONDITIONING MATERIAL WITH FOUNDATION CONDITIONING GEOTEXTILE FABRIC.
9. CONTRACTOR SHALL INSTALL CULVERT PIPE, INSTALLING FABRICATED SQUARE FLANGE TO CONCRETE HEADWALL. BEGIN BACKFILLING PIPE ON EACH SIDE OF PIPE IN SUCH A MANNER TO LIMIT HEIGHT DIFFERENTIAL ON EACH SIDE OF CULVERT TO NO MORE THAN 12" AT ANY GIVEN TIME & IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATIONS. CONTINUE FILL PLACEMENT ON EACH SIDE OF CULVERT TO APPROXIMATE CONTOUR 546 AND SLOPING TO TOP OF EXISTING CONCRETE HEADWALL (ELEV. - 547.0±).
10. INSTALL SILT FENCE ALONG TOP OF PLUNGE POOL (EACH SIDE), ALONG TOE OF SLOPE AND AROUND PIPE AND INSTALL TEMPORARY SILT CHECK TYPE 'B' DAMS WITH PITS AS SHOWN ON INTERMEDIATE PHASE PLAN.
11. REMOVE UPSTREAM & DOWNSTREAM IMPERVIOUS DIKES, BYPASS PUMPING & DEWATERING OPERATIONS.
12. CLEAR & GRUB AREA ABOVE INITIAL CLEARING LIMITS LINE.
13. ONCE FILL MATERIAL HAS BEEN INSTALLED TO TOP OF CONCRETE HEADWALL ELEVATION, CONTRACTOR SHALL INSTALL A TEMPORARY BERM AND SLOPE DRAIN TO PROTECT CONSTRUCTED FILL SLOPE. REPEAT DAILY UNTIL SLOPE IS COMPLETED. CONTRACTOR SHALL CLEAR & GRUB REMAINING EXISTING FILL SLOPE.
14. CONTRACTOR SHALL INSTALL PIPE FROM STRUCTURE 20 TO 21. INSTALL PIPE INLET PROTECTION.
15. CONTRACTOR SHALL COMPLETE INSTALLATION OF FILL FROM TOP OF CONCRETE HEADWALL TO PROPOSED SUBGRADE.
16. CONSTRUCT TEMPORARY BERM AT TOP OF SLOPE & PROVIDE TEMPORARY SLOPE DRAIN.
17. SEED & MULCH SLOPE AND PROVIDE EROSION CONTROL MATTING ON SLOPE. SLOPE SHALL BE SEEDED, MULCHED & MATTING INSTALLED WITHIN 7 CALENDAR DAYS OF SLOPE COMPLETION.
18. INSTALL DRAINAGE PIPE FROM STRUCTURE 24 TO 25 AND 26 TO 27. CONSTRUCT CATCH BASIN AND/OR PROVIDE STEEL PLATES OVER BASIN UNTIL STRUCTURE IS COMPLETED. INSTALL PIPE INLET PROTECTION AT STRUCTURE 26.
19. INSTALL CURB & GUTTER, FRAME & GRATE AND PAVEMENT.
20. CONSTRUCT TRAIL TO TYPICAL SECTION (PAVEMENT DRAINING TO CURB).
21. INSTALL GUARDRAIL, COMPLETE SHOULDER FINE GRADING AND SEED & MULCH AREA FROM PAVEMENT TO TOP OF SLOPE.

EROSION CONTROL NOTES FOR PIPE & FILL INSTALLATION: (4) ***TYPICAL DESIGNATION***

1. IMMEDIATELY AFTER CLEARING AREA FOR CULVERT, PLUNGE POOL & FILL INSTALLATION, CONTRACTOR SHALL INSTALL SILT FENCE ALONG TOP OF BANK ON EACH SIDE OF STREAM.
2. CONTRACTOR WILL BE PERMITTED TO REMOVE A SECTION OF SILT FENCE TO ACCESS STREAM IN ORDER TO PLACE STONE CULVERT BEDDING MATERIAL AND TO CONSTRUCT PLUNGE POOL, PROVIDED CONTRACTOR REINSTALLS SILT FENCE AT END OF EACH WORK DAY.
3. INITIAL CLEARING OF CULVERT AND FILL SLOPE INSTALLATION LIMITED TO ELEVATION 547.0± (TOP OF EXISTING CONCRETE HEADWALL).
4. CONSTRUCT INITIAL FILL TO PROPOSED CONTOUR 546.0± AS SHOWN ON INTERMEDIATE PHASE PLAN.
5. DURING INITIAL FILL SLOPE INSTALLATION TO CONTOUR 546.0±, PROVIDE TEMPORARY MEASURE TO DIRECT EXISTING RUNOFF FROM ABOVE 546 CONTOUR TO BELOW 544 CONTOUR TO PROTECT INITIAL FILL SLOPE CONSTRUCTION.
6. INSTALL SILT FENCE AT TOE OF FILL SLOPE AND AROUND TOP OF PLUNGE POOL AND OVER CULVERT PIPE IMMEDIATELY AFTER PLUNGE POOL INSTALLATION AND INITIAL FILL SLOPE INSTALLATION IS COMPLETED.
7. PROVIDE TEMPORARY BERM ALONG TOP OF 546 CONTOUR AND PROVIDE TEMPORARY SLOPE DRAIN. AS FILL PROGRESS UP TO 556.0± CONTOUR (TOP OF SLOPE) CONTRACTOR SHALL PROVIDE A TEMPORARY BERM AND SLOPE DRAIN AT END OF EACH WORK DAY.
8. CONTRACTOR SHALL PROVIDE TEMPORARY SAFETY MEASURES DURING INSTALLATION OF CATCH BASIN TO PROTECT VEHICLES AND PEDESTRIANS FROM DAMAGE OR INJURY. MEASURES SHALL BE ACCEPTABLE TO ENGINEER.
9. AT TIME FILL SLOPES ARE SEEDED & MULCHED, ALL DISTURBED AREAS BETWEEN TOE OF SLOPE & PLUNGE POOL SHALL BE SEEDED & MULCHED.
10. CONTRACTOR SHALL DIRECT RUNOFF TO BERM & TEMPORARY SLOPE DRAIN BETWEEN STA. 31+00 TO 33+00 AT ALL TIMES EXCEPT AS FOLLOWS:
    A) AFTER CURB & GUTTER IS INSTALLED PROVIDED ALL RUNOFF IS FROM EXISTING PAVEMENT, NEW PAVEMENT OR CONCRETE. SLOPE SHOULDER FROM BACK OF CURB TO TEMPORARY SLOPE DRAIN.
11. DURING INTERIM TIME BETWEEN CURB & GUTTER INSTALLATION AND PAVING OF MULTI-USE PATH, ALL RUNOFF SHALL BE DIRECTED TO TEMPORARY SLOPE DRAIN.
12. PRIOR TO CONSTRUCTION OF FILL, CONTRACTOR SHALL RELOCATE EXISTING 6" VCP & INSTALL SANITARY SEWER CRADLE. (PROVIDE 7 DAYS CURING TIME FOR CONCRETE)

PROJECT GRADING NOTES:

1. ALL ASPECTS OF GRADING WORK SHALL BE IN COMPLIANCE WITH NCDOT STANDARDS.
2. CONTRACTOR SHALL PROOF-ROLL ALL AREAS OF PROPOSED MULTI-USE PATH OR SIDEWALK IMPROVEMENTS. IN AREAS INACCESSIBLE, THE ENGINEER WILL CHECK SUBGRADE SUITABILITY IN ACCORDANCE WITH NCDOT CONSTRUCTION MANUAL.
3. ALL FILL MATERIAL SHALL BE INORGANIC, FREE OF DEBRIS, SUITABLE FOR COMPACTION & APPROVED BY THE ENGINEER FOR USE ON THIS PROJECT.
4. FILL MATERIAL SHALL BE SPREAD IN SUCCESSIVE, UNIFORM LAYERS NOT EXCEEDING 8" IN LOOSE THICKNESS & COMPACTED TO NCDOT REQUIREMENTS.
5. PROVIDE POSITIVE DRAINAGE AT ALL TIMES DURING COURSE OF WORK TO PREVENT WATER PONDING AT ANY LOCATION WITHIN PROJECT LIMITS.

SEE SHEET 14.2 FOR PUMP AROUND & PUMP DISCHARGE DETAILS

DocuSigned by: Mark Reich 58637F048AD84...

NORTH CAROLINA PROFESSIONAL SEAL 12634 ENGINEER MARK D. REICH

NCDOT PROJECT NO. EB-3314 E

PROPOSED SIDEWALK IMPROVEMENTS FOR

TOWN OF YANCEYVILLE

YANCEYVILLE, NORTH CAROLINA
YANCEYVILLE TOWNSHIP, CASWELL COUNTY, NC

alley, williams, carmen & king, inc.
ENGINEERS, ARCHITECTS & SURVEYORS
740 chapel hill road p.o. box 1179
burlington, n.c. 27215 336/226-5534
Firm's Engineering License No. F-0203

DATE: 8/15/14	JOB NO. 13069
DRAWN BY: WDF	DWG NAME: 13069(10153)BASE.DWG
CHECKED BY: MDR	SHEET NO. 14.3

EROSION CONTROL DETAILS